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EXTRANODAL MALE GENITAL INVOLVEMENT WITH DIFFUSE LARGE B-CELL LYMPHOMA

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Background: Primary genitourinary lymphoma is an exceedingly rare form of extranodal non-Hodgkin lymphoma. Its clinical presentation can mimic other urologic conditions, contributing to diagnostic delays, treatment delays, and inappropriate initial management.

Case Presentation: An 84-year-old male presented to a urologist in Guam with urinary retention and was diagnosed with phimosis. He underwent partial circumcision but subsequently developed a progressively enlarging penile mass and B symptoms over two months. Imaging revealed multiple soft tissue masses within the penile shaft and perineum, along with pelvic and inguinal lymphadenopathy. He traveled to the continental U.S. for further evaluation, where his exam was notable for a large ulcerating mass on the ventral penile shaft, scrotal edema, and inguinal lymphadenopathy. PET-CT demonstrated a large hypermetabolic penile mass (SUV 22.6) with extensive nodal and extranodal FDG-avid disease both above and below the diaphragm. Biopsy of the penile mass revealed large atypical lymphoid cells positive for CD20, BCL-2, BCL-6, and MUM-1, and negative for epithelial, T-cell, and myeloid markers, confirming a diagnosis of activated B-cell type DLBCL, Stage IV. Cytogenetic analysis showed MYC gain in 27% of cells. Given his advanced age and frailty, he was initiated on dose-reduced R-mini-CHOP chemotherapy. In addition, due to recent data showing greater efficacy of polatuzumab-vedotin in non-germinal center phenotype DLBCL, his regimen was modified to include this agent in place of vincristine for subsequent cycles. He completed six cycles of therapy and achieved a partial metabolic response (Deauville 4) on follow-up PET-CT, with undetectable minimal residual disease by clonoSEQ assay.

Discussion: Penile malignancy is exceedingly rare. It commonly presents as a penile masses or non-healing wound, along with a variety of possible urologic complaints. Some of the etiologies of this presentation, like squamous cell carcinoma or phimosis, can be treated with surgical intervention. Inappropriate procedures, like in this case, can lead to permanent disfigurement and significant psychosocial stress. This case highlights DLBCL with penile involvement that was misdiagnosed as phimosis and treated as such, leading to significant delay in, and advanced stage at correct diagnosis. In addition, the patient was successfully treated with reduced intensity regimens along with polatuzumab-vedotin which both have well-established efficacy in classic nodal DLBCL but have no published data in genitourinary extranodal involvement. There are 27 previously reported cases of extranodal DLBCL with penile involvement. Median age at diagnosis was 65 years old and the most common stage at diagnosis was IE (n = 12). The most common presenting symptom was penile mass (n = 11). Other presentations included penile ulceration (n = 8), dysuria (n = 3), hematuria (n = 2), priapism (n = 3), and edema (n =1). The most common treatment regimen was CHOP with (n = 12) or without (n = 9) rituximab.

Conclusion: This case highlights the importance of considering lymphoma in the differential diagnosis of atypical penile lesions. Early biopsy and broad diagnostic consideration are critical to avoid delays in treatment. Standard reduced intensity regimens for DLBCL may offer the greatest clinical benefit for elderly patients with advanced-stage disease.

FOSMANOGEPIX - A NOVEL ANTIFUNGAL FOR A CASE OF FUSARIOSIS

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Introduction: Fusarium can cause disseminated disease in immunocompromised patients, leading to high mortality rate. We describe a case of disseminated fusarium in a patient with hairy cell leukemia who was successfully treated with a novel antifungal therapy, Fosmanogepix.

Case Description: A 36-year-old male with hairy cell leukemia s/p cycle 1 of cladribine presented to his oncologist in clinic two days after discharge where he endorsed continued fevers, fatigue, new rash, and difficulty walking due to calf pain. Due to his symptoms, he was readmitted to the hospital.

His exam was notable for red-violaceous nodules with central erosions on upper and lower extremities. Patient also had synovitis of bilateral wrists and tachycardia. Labs were significant for an ANC of 0, elevated liver enzymes, and mildly elevated CK. Transplant ID recommended empiric vancomycin, cefepime, and amphotericin due to concerns of a disseminated fungal infection. Dermatology biopsied one of the lesions and obtained H&E in addition to bacterial, fungal, and acid-fast bacilli cultures.

Pathology confirmed presence of angioinvasive fungal infection. Voriconazole was added due to concerns of disseminated fusarium infection. Filgrastim was started to aid in neutrophil recovery.

Both blood cultures and biopsy cultures resulted positive for Fusarium and susceptibilities returned with the following MICs: voriconazole with MIC =16, isavuconazole with MICs >16, posaconazole with MIC > 16, and Amphotericin MIC = 2. Patient was continued on both Amphotericin and Voriconazole given fluctuating voriconazole levels.

The patient needed to transition to an oral option, and after reviewing literature, there was consideration of a novel antifungal, Fosmanogepix, which demonstrated an MEC = 0.015 (high activity). After discussion with patient, he started on Fosmanogepix 400 mg BID. Patient experienced nausea associated with Fosmanogepix during first week which resolved.

Patient continued to experience calf pain during his clinical course. MRI of lower extremities showed diffuse edema in subcutaneous tissues with multifocal intramuscular abscesses. Patient underwent aspiration which showed hyphal elements but no fungal growth. Results of a WBC scan also correlated. Throughout patient's clinical course, he continued experiencing waxing and waning subcutaneous nodules that slowly became less painful with serial MRIs of lower extremities demonstrating decreased edema and size of intramuscular abscesses. Our patient continued Fosmanogepix for approximately 10 months with resolution of symptoms.

Discussion: Disseminated fusarium in immunocompromised patients has high mortality rates, with Fusarium species often resistant to azoles, echinocandins, and even Amphotericin B. Some research has shown that combination therapy with amphotericin and voriconazole may improve outcomes, but mortality remains high. Immune recovery is crucial for treatment success, which is particularly challenging in cancer patients. Fosmanogepix is a novel antifungal medication and is a pro-drug metabolized to Manogepix which inhibits the fungal enzyme (Gwt1) involved in the glycosylphosphatidylinositol biosynthesis pathway of the fungal cell wall. Limited cases exist for its use in disseminated fusarium, and for our patient it demonstrated good activity with an MEC (minimum effective concentration) = 0.015 μg/mL. Our patient received therapy for a total of 10 months resulting in symptom resolution and no severe drug-related adverse events.

UNMASKING POLYCYTHEMIA VERA: A CASE OF MISSED DIAGNOSIS PRESENTING AS DECOMPENSATED CIRRHOSIS

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Polycythemia vera (PV) is a chronic myeloproliferative neoplasm characterized by erythrocytosis, with common associations including leukocytosis, thrombocytosis, and JAK2 mutations. While the classic presentation involves elevated hemoglobin and hematocrit, some patients exhibit masked polycythemia vera (mPV), where typical hematologic features are obscured. This often leads to delayed diagnoses, misattribution of symptoms, and a cascade of preventable complications. We present a striking case of mPV, initially misdiagnosed as cryptogenic cirrhosis, which ultimately resulted in the patient's progression to liver failure necessitating evaluation for liver transplantation. This case underscores the critical need for heightened clinical suspicion in patients with unexplained thrombosis in unusual sites.A 40-year-old male with a medical history significant for portal vein thrombosis, diagnosed three years prior, splenomegaly, evolving splenic infarcts, and recurrent ascites, was transferred from an outside emergency department with worsening abdominal distension and ascites. His initial workup in 2022, prompted by his history of portal vein thrombosis, had included a comprehensive hypercoagulability panel, which returned negative for common thrombotic disorders. Laboratory tests revealed normal red blood cell indices and no evidence of myeloproliferative disease. However, his clinical status continued to worsen, culminating in a diagnosis of decompensated liver cirrhosis in 2025. Upon current presentation, laboratory findings revealed hemoglobin of 20.2 g/dL, hematocrit of 60.9%, and leukocytosis of 13.2 ×10□/L, a marked deviation from previous tests in 2022. A CT angiogram confirmed cirrhosis with portal hypertension and a large volume of ascites. Given the patient's history of portal and arterial thrombosis, as well as signs of evolving Budd-Chiari syndrome in magnetic resonance imaging (MRI), oncology was consulted. A JAK2 mutation test returned positive, leading to the diagnosis of polycythemia vera. Interventional radiology was consulted for transjugular intrahepatic portosystemic shunt (TIPS) placement but advised against the procedure due to the patient's cavernous transformation of the portal vein and hepatic vein occlusion. Liver transplantation emerged as the only viable treatment option, and hydroxyurea therapy was initiated to manage PV. This case highlights the challenges of diagnosing masked polycythemia vera. In 2022, our patient did not meet the diagnostic criteria for PV or essential thrombocythemia, as his hematologic parameters fell within normal limits. Despite a negative thrombophilia workup, his continued progression of thrombosis, including portal and hepatic vein involvement, prompted further investigation. His eventual presentation in 2025 with elevated hemoglobin, leukocytosis, and JAK2 mutation positivity confirmed the diagnosis of polycythemia vera. mPV can remain undiagnosed until late stages, especially when patients do not exhibit overt hematologic abnormalities.Notably, Barbui et al. (2013) and Benjamin et al. (2011) have emphasized that in mPV, thrombosis often precedes diagnosis and can involve unusual sites such as renal veins or portal veins. The clinical significance of this case is twofold: first, it underscores the importance of maintaining a broad differential diagnosis when encountering patients with unexplained thrombosis in unusual sites. Second, it highlights the potentially severe consequences of delayed diagnosis in cases of mPV, which can result in complications such as Budd-Chiari syndrome and irreversible liver damage.

INFLAMMATORY MYOPATHIES & CANCER: LOOKING BEYOND THE SHAWL TO IDENTIFY POSSIBLE MALIGNANCY

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Introduction: For over a century, epidemiological studies have characterized an association between idiopathic inflammatory myopathies (IIM) and malignancy. Recent meta-analysis suggest that patients diagnosed with dermatomyositis (DM), a common subtype of IIM, demonstrate an increased risk for 11 malignancy subtypes relative to the general population. While DM often presents with robust clinical findings such as cutaneous manifestations, bilateral proximal muscle weakness, and interstitial lung disease, the association between these clinical findings and evidence driven malignancy screening protocols remains unclear. Early detection and treatment of underlying malignancy in patients with IIM has been shown to improve health outcomes, which led Oldroyd et al. to publish new international IIM cancer screening guidelines in 2023. We report a case of underlying esophageal adenocarcinoma in a patient with recently diagnosed DM that provides evidence to support the use of these screening guidelines.

Case Description: A 69-year-old male with a medical history notable for pancreatitis, diverticulosis, and tobacco use presented with a 1-month history of bilateral proximal muscle weakness and an erythematous rash. The patient denied dysphagia, dyspnea, and constitutional symptoms. Workup for autoimmune etiology included complement levels, ANA, Lyme, anti dsDNA Abs, anti CCP Abs, and RA factor, all which returned negative despite ESR and CK trending up. He was prescribed a course of prednisone which temporarily alleviated his symptoms. Two-weeks later, after completing his steroid course, he returned to the ED due to his symptoms returning. Given the presence of Shawl and V-signs, Gottron's papules, and elevated inflammatory markers, DM was suspected. Concern for multi-system organ involvement/myositis led to MRI and CT scans being ordered, which were notable for autoimmune myositis and circumferential thickening of the lower esophagus. Dermatology, General Surgery, and Gastroenterology were consulted for biopsies and an EGD; results showed mild inflammation and focal vacuolar changes in the skin, interface dermatitis in the right knee, and esophageal adenocarcinoma. His discharge plans included neoadjuvant therapy, restaging imaging for his esophageal malignancy, and follow-up with Rheumatology for DM management.

Discussion: This case highlights how the new IIM cancer screening guidelines can lead to early detection of malignancy and improved health outcomes. Because of the robust number of malignancies associated with IIM, and frequency of underlying malignancy not manifesting in clinical symptoms at the time of IIM diagnosis, it can be challenging to initially justify broad spectrum cancer screening. Given the data suggesting that one in four people with IIM are diagnosed with malignancy within three years of IIM onset, the need for international IIM associated cancer screening is imperative. These recommendations suggest patients with enhanced cancer screening risk should receive a CT scan of their chest, neck, abdomen, and pelvis. Patients with moderate-to-high risk should proceed with basic and enhanced cancer screening at the time of IIM diagnosis. This patient's history of DM, age at the time of DM onset, persistent disease activity despite immunosuppressant therapy, and cutaneous manifestations met high-risk criteria to proceed with advanced screening that ultimately resulted in diagnosis of malignancy that was asymptomatic at the time of DM diagnosis.

A CASE SERIES OF TRAVEL-ASSOCIATED MELIOIDOSIS INFECTION IN WISCONSIN, UNITED STATES

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Burkholderia pseudomallei is a bacteria that is endemic to southeast Asia and northern Australia but is rarely found in The United States. This pathogen results in melioidosis and while most cases are subclinical or asymptomatic, severe cases can occur with high mortality rates. It is classified as a Tier 1 Select agent, requiring strict handling and immediate destruction once identified. We present two cases of melioidosis in Wisconsin. The first case involved a 70-year-old Hmong-speaking man who presented with a few weeks of dry productive cough and worsening shortness of breath. His appetite was declining with increased satiety and postprandial fatigue with 20 pounds unintentional weight loss in the preceding months. The patient was born in Laos but raised in Thailand, where he worked primarily as a corn farmer, and has lived in Wisconsin for the past 20 years. Five months prior, he traveled to Laos to visit family, which is something he does intermittently. CT chest showed reticulonodular opacities in the right upper lobe of the lung with multiple cavitary lesions. Sputum cultures grew an isolate which was identified by MALDI-TOF-MS as Burkholderia thailandensis. Due to known cross-reactivity between B. thailandensis and B. pseudomallei, the isolate was forwarded to the Wisconsin State Laboratory of Hygiene for further testing, where it was identified as B. pseudomallei. After identification, antibiotics were transitioned to ceftazidime for 2 weeks, followed by a 90-day course of trimethoprim-sulfamethoxazole. At the end of treatment, the patient reported feeling better and repeat chest X-rays demonstrated significant improvement in the right upper lobe cavity.The second case involved a 58-year-old man who presented with worsening back pain for the preceding 2 weeks, accompanied by fever and anorexia. The patient had recently immigrated to the US from Nepal. His symptoms originally began a week prior to traveling. CT of the abdomen showed a multi-loculated mass originating in the abdominal wall and extending into the retroperitoneum, measuring 19 cm x 6 cm x 5.5 cm . Upon admission, the patient had drain placement yielding 350 mL of purulent fluid. Empiric piperacillin-tazobactam was initiated while awaiting culture results from the fluid. Given the suspicion of infection with B. pseudomallei, the antibiotics were switched to Ceftazidime. Five days later, the laboratory workup confirmed infection with B. pseudomallei. Despite recommendations to stay inpatient to complete therapy and poor candidacy for outpatient antibiotic therapy, the patent was transitioned to a 90 day course of trimethoprim-sulfamethoxazole with overall improvement and resolution of the fluid collection on follow-up.In both cases, identification and appropriate treatment of B. pseudomallei was delayed by weeks. Both patients likely acquired the bacteria by travel to endemic regions. However, within the last decade it has been found to be locally endemic to the Southeast US. These cases highlight how melioidosis presents with highly variable indolent symptoms, complicating timely diagnosis and treatment. Physicians should be aware that Burkholderia pseudomallei infection is an important consideration when constructing a differential diagnosis due to its variable clinical presentation and increasing regional prevalence in the US.

LEGIONELLA GOES VIRAL: INFLAMMATORY CARDIOMYOPATHY IN LEGIONNAIRES' DISEASE

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Introduction: The most commonly reported manifestation of *Legionella pneumophilia (LP)* infection is pneumonia, known as Legionnaires' disease. Although relatively uncommon, extrapulmonary manifestations of this virulent bacterium can lead to multiorgan involvement, including renal, neurological, and gastrointestinal complications. Cardiac involvement, though exceedingly rare, has also been reported. While infectious etiologies of myocarditis are often viral in nature, bacterial pathogens such as LP have been identified as potential inciting agents. Here, we present a case of suspected myocarditis in the setting of severe LP infection.

Case Presentation: The patient is a 67-year-old male with a past medical history of hypertension, COPD, tobacco use disorder, and remote history of CVA. On presentation he was toxic appearing, febrile to 105F and tachycardic. He reported several days of fatigue and diarrhea with nausea and limited appetite. Blood work was notable for leukocytosis to 12.3 103/μL, sodium 131 mEq/L, potassium 2.6 mEq/L, CRP 22, ESR 28, Procal 1.87. High sensitivity troponin (hsTn) was elevated to 106 ng/L and CXR was notable for consolidation in the right upper lobe. Common viral panel and enteric pathogen panel we both negative, while legionella urinary antigen testing was positive. Shortly after admission the patient developed frequent episodes of non-sustained ventricular tachycardia (VT), which ultimately led to VT storm, and hsTn peaked at 647 ng/L 24 hours after admission without ischemic ecg changes. The patient was ultimately started on intravenous doxycycline given concern for arrythmia with macrolides or fluoroquinolones. Both lidocaine and amiodarone were started as antiarrhythmic therapy and the patient became somnolent and hypoxic, requiring high flow nasal cannula and rectal tube placement for profuse diarrhea. On day three of admission the patient's clinical status improved and an ischemic cardiac workup was completed. Coronary angiogram was without abnormality, and TTE was remarkable for EF of 25% with global hypokinesis. Given concern for infiltrative vs inflammatory disease, cardiac MRI was completed with evidence of nonischemic scar and elevated T1 mapping parameters with nondiagnostic T2 mapping given motion artifact. Outpatient amyloid imaging was not suggestive of cardiac amyloid, and follow-up TTE eight months after discharge showed recovered EF of 55-60% after initiation of guideline directed medical therapy.

Discussion: This patient initially presented with a classic case of Legionairre's disease, as diarrhea, altered mental status and infiltrative lung pathology are hallmark features of the condition. Additionally, the patient's acute and severe rise in cardiac biomarkers, ventricular ectopy, and new-onset cardiomyopathy—with negative ischemic evaluation in the setting of virulent infection—point to an inflammatory origin of his cardiac injury. Non-ischemic scarring seen on cMRI also supports this etiology. Unfortunately, T2-weighted MRI imaging was nondiagnostic, and biopsy was not completed due to its invasive nature; either could have helped confirm the diagnosis. Although rare, several case reports have described myocarditis in the setting of LP infection. Moving forward, clinicians should remain vigilant for the extrapulmonary complications that can present with Legionnaires' disease.

A CASE OF IGG4-RELATED AUTOIMMUNE PANCREATITIS MIMICKING PANCREATIC CANCER

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Background: IgG4-autoimmune pancreatitis is characterized by elevated IgG4-positive plasma cells and lymphoplasmacytic infiltration in the pancreas. Symptoms can be difficult to differentiate from pancreatic cancer. Here, we present a case of a patient who was initially scheduled in oncology clinic for his pancreatic mass but was later found to have IgG4 pancreatitis.

Case Description: An 84-year-old male with no prior medical history presented with several months of painless jaundice, decreased appetite, and unintentional weight loss. He was seen in primary care clinic with these symptoms and had an abnormal abdominal CT scan consistent with a 16mm pancreatic mass. There was no family history of gastroenterological pathology or cancer. He was informed that he likely had pancreatic cancer and was scheduled in multi-disciplinary pancreatic oncology clinic. During a hospital admission for an unrelated, incidentally found atrial fibrillation with slow ventricular response, an endoscopic ultrasound (EUS) and a core biopsy of the mass at the pancreatic head was performed. His surgical pathology results returned 4 days after the biopsy as having lymphoplasmacytic inflammation with 50 IgG4+ plasma cells in the most inflamed high-power field. He was diagnosed with IgG4 pancreatitis, and his oncology appointments were canceled. Serum IgG4 level was ordered and returned at 759.3 mg/dL.

Discussion: Autoimmune pancreatitis has been classified into two clinical subtypes. Type 1 is IgG4-related pancreatitis, associated with high serum IgG4. Type 2 is idiopathic duct-centric pancreatitis, associated with inflammatory bowel disease. The average age at diagnosis of IgG4 pancreatitis is 60-70 and males are more commonly affected. Patients with IgG4 pancreatitis can present similarly to pancreatic cancer, with abdominal pain, jaundice, weight loss, and early satiety. The diagnosis of IgG4 pancreatitis can be challenging and could cause a delay in treatment. EUS-guided biopsy and elevated IgG4 serum levels can help distinguish IgG4 pancreatitis from pancreatic cancer. Is it important to clearly communicate with patients that the definitive diagnosis of pancreatic cancer requires biopsy results.

BEYOND VASO-OCCLUSION: RECOGNIZING HYPERHEMOLYTIC SYNDROME IN SICKLE CELL DISEASE

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INTRODUCTION: Hyperhemolytic syndrome (HHS) is a life-threatening delayed hemolytic transfusion reaction (DHTR) characterized by destruction of both transfused and autologous RBCs, resulting in severe hemolytic anemia. Though rare, this occurs most often in patients with sickle cell disease (SCD), who are at increased risk due to their history of repeated transfusions. Presentation often mimics vaso-occlusive crisis (VOC) with symptoms such as severe pain, fever, and hemolysis within three weeks of receiving a transfusion, making it difficult to recognize and treat.

CASE: 61-year-old man with hemoglobin SS disease, COPD, hypertension, hyperlipidemia, chronic cholangiopathy, and tobacco use disorder presented to the emergency department for acute severe abdominal pain.

He had been discharged three days earlier after a five-day admission for VOC-related abdominal pain, during which he received two units of packed RBCs for hemoglobin 5.9g/dL, improving to 8.4 g/dL (baseline 7-9.5 g/dL). He returned with new, sharp, pulsating left upper quadrant pain radiating to the chest, which was unlike past sickle cell pain crises. Blood work revealed leukocytosis (WBC 31.1 K/uL, 65% PMNs), anemia with hemoglobin of 4.9 g/dL with red cell sickling, macrocytosis (MCV 106 fL) and new onset thrombocytopenia (platelets 71 K/uL). Additional workup showed acute rise in LDH >2000, total bilirubin of 21.8 mg/dL, undetectable haptoglobin, inappropriately normal absolute reticulocyte count of 102 K/uL, low C3 and C4, and negative DAT. He rapidly decompensated into multi-organ failure including stage III AKI with urinary retention, hypoxic respiratory failure, ischemic liver injury and metabolic encephalopathy.

His severe and rapid clinical decline, marked by hemoglobin levels falling below his pre-transfusion baseline, raised concern for HHS. In addition to supportive cares, he was treated with IVIG, followed by eculizumab—a monoclonal antibody targeting complement protein C5—and erythropoietin. His condition gradually stabilized, with recovery of kidney and liver function, return to baseline mental status, and adequate pain control. Notably, he did not receive further transfusions this hospitalization.

DISCUSSION: This case highlights the importance of cautious transfusion practices in SCD to avoid serious, potentially fatal complications, such as HHS.

Hyperhemolytic syndrome can mimic VOC in patients with SCD, complicating early recognition. Clinicians should maintain a high index of suspicion when a patient with SCD presents with severe anemia within three weeks of a transfusion and involve Hematology early.

The American Society of Hematology (ASH) recommends immunosuppressive therapy in patients with SCD with a DHTR and ongoing hyperhemolysis (grade C). Given the risk of exacerbating hemolysis, further transfusions should be avoided unless life-threatening anemia is present.

Hyperhemolysis may occur in the absence of detectable alloantibodies or positive DAT. A paradoxical drop in hemoglobin below pre-transfusion levels should raise suspicion of HHS, where peripheral destruction of reticulocytes by macrophages alongside myelosuppression often leads to relative reticulocytopenia. Eculizumab serves both therapeutic and diagnostic purposes in this context; clinical improvement after administration supports a complement-mediated hyperhemolytic process.

RARE CASE OF INFLUENZA ASSOCIATED PULMONARY ASPERGILLOSIS IN A CRITICALLY ILL PATIENT

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Influenza associated pulmonary aspergillosis (IAPA) associated emerging fungal superinfection, primarily A. fumigatus, in patients with flu especially in critically ill or immunocompromised individuals has been increasingly recognized in ICU settings particularly among patients requiring mechanical ventilation.

Graphically highest incidence is seen in Europe especially Netherlands, Belgium and Germany. Emerging recognition has been noticed in North America suggesting 7 to 19% of 5 cc influenza patients develop IAPA. Highest incidence is noted in northern states (example Michigan, Minnesota in Canada) due to cold winters and increased ICU admission for influenza.

It is associated with high mortality up to 50 to 80% particularly in ICU patients. Commonly associated risk factors are severe and influenza especially influenza A/H1N1 and A/H3N2, ICU admission with mechanical ventilation, corticosteroid use, chronic lung disease, immunosuppression.

We present a case of 61-year-old female with previous history of ARDS and multiple other comorbidities who had worsening shortness of breath due to influenza requiring mechanical intubation. She initially showed signs of improvement, but due to continuous deterioration further investigation showed presence of Aspergillus which was later unsuccessfully treated with voriconazole. This case is notable due to increasing incidence of IAPA in North America which is usually unrecognized or underdiagnosed. Early diagnosis and treatment can significantly decrease morbidity and mortality in patients in the ICU. In this Review, we discuss clinical aspects of IAPA and identify crucial knowledge gaps and formulate directions for future research.

THE WAITING GAME: HEART FAILURE MASKING THE DIAGNOSIS OF RENAL CELL CARCINOMA

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Introduction: Renal cell carcinomas (RCCs) constitute up to 90 percent of primary kidney neoplasms. The classic triad of flank pain, hematuria, and a palpable abdominal mass is uncommon (5-10 percent of cases), while 50 percent of cases are diagnosed incidentally. Due to the insidious nature of the disease, 33 percent of cases are diagnosed with regional or metastatic spread, and up to 15 percent of cases present with tumor thrombus formation that may extend from the kidney into the renal vein, inferior vena cava (IVC), and in less than 1 percent of cases, into the right atrium. This case report emphasizes a remarkable finding of direct tumor thrombus extension into the right ventricle and the right and left pulmonary arteries ending in a subsegmental distribution.

Case Presentation: A 78-year-old female with hypertension and hyperlipidemia presented to her outpatient clinic due to fatigue and bilateral lower extremity edema of one month duration. Laboratory evaluation was notable for an elevated BNP of 455 pg/mL. The provider suspected new onset heart failure and ordered a Transthoracic Echocardiogram (TTE) for further evaluation. The TTE was obtained two months later and demonstrated a complex 9.4 cm x 3.7 cm mass extending from the IVC into the right atrium, right ventricle, and pulmonary artery. Surprisingly, there was no significant ventricular dysfunction, outflow obstruction, or damage to the tricuspid valve. The patient was sent to the Emergency Department, and a CTA Chest/Abdomen/Pelvis demonstrated a large heterogeneous infiltrative mass within the left kidney consistent with RCC. The mass invaded the left renal vein and extended further into the IVC, right atrium, right ventricle, central pulmonary artery, left and right pulmonary arteries, and terminated in a segmental/subsegmental distribution. Cardiothoracic Surgery, Urology, and Oncology specialists were consulted and confirmed the diagnosis of RCC. The patient ultimately decided to pursue Palliative Care and Home Hospice was initiated. The patient passed away 82 days later in the comfort of her own home.

Discussion: New onset heart failure is an uncommon presentation for RCC and can occur with or without the presence of tumor thrombus extension into the right atrium. This case report focuses on the exceedingly rare presentation of tumor thrombus extension into the pulmonary vasculature with termination at the subsegmental level. This provided an opportunity for novel exploration into the management of advanced Stage IV RCC with right sided cardiac involvement. The standard of care for these cases is under research, with recent studies advocating for a combination procedure including a radical nephrectomy followed by tumor thrombus extraction while on Cardiopulmonary Bypass. These cases historically approached a 30 percent near-term mortality rate (death prior to hospital discharge), but this rate has fallen below 10 percent with advances in surgical technique. Additional research is evaluating the role of adjuvant immunotherapy for RCC with cardiac involvement. The optimal timing of surgery and the initiation of immunotherapy remains unknown and often leads to a complicated shared decision-making process. This case demonstrates that delaying these interventions may be more feasible than previously thought.

COMPLEX BURKHOLDERIA PNEUMONIA WITH BACTEREMIA COMPLICATED BY HEMOPHAGOCYTIC LYMPHOHISTIOCYTOSIS IN CHRONIC GRANULOMATOUS DISEASE

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Introduction: Members of the Burkholderia cepacia complex (BCC) are opportunistic gram-negative bacilli associated with severe infections in immunocompromised individuals, specifically those with chronic granulomatous disease (CGD) and cystic fibrosis (CF). Treatment is challenging due to intrinsic resistance, unpredictable clinical response to antibiotics, and lack of reliable antimicrobial susceptibility testing (AST).

Case Presentation: A 21-year-old man with CGD presented with a productive cough, fevers, night sweats, and diarrhea after discontinuing prophylactic trimethoprim-sulfamethoxazole (TMP-SMX), itraconazole, and interferon-gamma. The patient was found to have complex pneumonia and bacteremia. He was promptly escalated to empiric meropenem when blood cultures isolated BCC, then tailored to ceftazidime monotherapy based on lab-reported susceptibility. His course was complicated by ongoing laboratory abnormalities including progressive pancytopenia, transaminitis, and markedly elevated ferritin consistent with hemophagocytic lymphohistiocytosis (HLH). Immunomodulation with dexamethasone and IVIG was initiated, guided by Hematology, with some initial improvement. However, the patient experienced fever recurrence and was found to have refractory bacteremia despite six days of ceftazidime, prompting transition back to meropenem. Extrapolating from CF literature supporting combination therapy to enhance bacterial clearance, minocycline was added as a secondary agent. Rapid clinical improvement followed associated with clearance of bacteremia and normalization of HLH indices. Ultimately, he transitioned to oral minocycline and therapeutic-dose TMP-SMX, in addition to resumption of fungal prophylaxis. The patient was discharged home in stable condition with close outpatient follow up coordinated by his interdisciplinary CGD team.

Discussion: This case highlights diagnostic and therapeutic challenges in managing BCC infections in patients with CGD. The patient experienced refractory bacteremia despite susceptibility-guided tailoring to ceftazidime, underscoring that in vitro susceptibility may not reliably predict treatment success in BCC infections. In fact, due to discrepancies between AST and in vivo responses, lack of dependable pharmacologic data, and unreliable AST, the Clinical & Laboratory Standards Institute (CLSI) withdrew BCC breakpoints from most recent laboratory guidance (1,2). For patients with CGD with complex or refractory BCC disease, combination antibiotic therapy may be required for cure, whether for adjunct effect or improved coverage. HLH may complicate severe infections in patients with altered immune systems and may contribute to morbidity and mortality, requiring prompt recognition and immunomodulation, in addition to adequately treating the underlying infection.

Conclusion: Management of Burkholderia infections in patients with CGD can be complicated by underlying immunodeficiency, dysregulated inflammatory responses, and less reliable in vitro susceptibility data. Careful clinical interpretation of minimal inhibitory concentrations (MIC) and consideration of combination therapy is important. Adherence to prophylactic antimicrobial therapy and access to interdisciplinary care remains important in preventing these complications.

DIFFUSE ALVEOLAR HEMORRHAGE AS THE INITIAL MANIFESTATION OF ACUTE MYELOMONOCYTIC LEUKEMIA

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Diffuse alveolar hemorrhage (DAH) is a rare but life-threatening condition caused by the accumulation of red blood cells in the alveolar spaces, leading to respiratory failure. While DAH has been reported in patients with acute myeloid leukemia (AML) following chemotherapy, its occurrence as an initial manifestation of AML is uncommon. We present the case of a 31-year-old female with no known hematologic history who presented with hemoptysis and dyspnea. Her leukocyte count was 28.2×10^9/L with 83% monocytic predominance. The patient underwent diagnostic bronchoscopy, which confirmed DAH. Bone marrow biopsy revealed AML with monocytic differentiation, a positive inversion 16 and FLT3 mutation was negative. The patient was treated with induction chemotherapy (7+3 regimen: daunorubicin and cytarabine), but her condition deteriorated, and she eventually succumbed to respiratory failure. This case highlights the importance of considering hematologic malignancy in the differential diagnosis of DAH, particularly in the absence of other identifiable causes.

Research Oral Vignettes

TAVR OUTCOMES BY NATIVE VALVE TYPE (TRICUSPID VS BICUSPID) AND ARTIFICIAL VALVE TYPE (BALLOON EXPANDABLE VS SELF EXPANDING) IN THE BICUSPID POPULATION: A RETROSPECTIVE ANALYSIS

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Transcatheter Aortic Valve Replacement (TAVR) has been shown to have generally comparable outcomes to Surgical Aortic Valve Replacement (SAVR) in patients with severe aortic stenosis. However, in patients with bicuspid aortic valve anatomy, the research picture is far less clear. Some studies have shown comparable outcomes for TAVR in tricuspid patients vs bicuspid patients while other studies have shown higher rates of strokes among bicuspid patients. It makes theoretical sense that bicuspid patients experience higher rates of strokes and other adverse events when undergoing TAVR relative to tricuspid patients since bicuspid valves tend to be more calcified and require more intra-procedure positioning during TAVR than comparably stenotic tricuspid valves. This project sought to compare the outcomes (especially stroke) between tricuspid valve TAVR patients and bicuspid valve TAVR patients. Additionally, this study sought to compare outcomes between patients with bicuspid valves who received a balloon-expandable TAVR vs a self-expandable TAVR. This was a retrospective study in which 552 patient charts were analyzed to compare outcomes after TAVR between tricuspid patients vs bicuspid patients. Those same outcomes after TAVR were analyzed in the 73 bicuspid patients who received self-expandable artificial valves vs balloon-expandable artificial valves. Patients were stratified by STS score to control for confounding. There was no statistically significant difference in primary outcomes (a composite of stroke and all-cause mortality), secondary outcomes, or echo aortic valve hemodynamic measurements at either 30 days or 365 days between bicuspid patients and tricuspid patients. Amongst bicuspid patients, there was no difference in either primary or secondary outcomes between the balloon-expandable group or the self-expandable group. Notably, there were differences in aortic valve echo data with the self-expandable group consistently outperforming the balloon-expandable group in improving echo hemodynamic measurements post-TAVR both at 30 days and 1 year. These results demonstrate that TAVRs in bicuspid patients are comparably safe to TAVRs in tricuspid patients. It is hard to comment on the similar clinical outcomes amongst bicuspid patients receiving balloon-expandable valves vs bicuspid patients receiving self-expandable valves given the small group of patients studied. The aortic valve echo results favoring self-expandable TAVRs may indicate that a study with a larger cohort of bicuspid patients might show better outcomes in patients getting self-expandable TAVRs.

INCREASING AWARENESS OF THE DUFFY NULL PHENOTYPE

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Introduction: The Duffy null phenotype (DNP) is a normal genetic phenotype resulting from nonexpression of the Duffy antigen on the surface of red blood cells. It is associated with an absolute neutrophil count (ANC) that is approximately 40% lower than that in non-DNP phenotypes. Approximately 67% of African Americans have the DNP. It offers an evolutionarily beneficial protection against Plasmodium vivax infection, and it does not confer an increased risk of infection. Applying standard ANC reference ranges to individuals with the DNP leads to misdiagnosis of neutropenia in healthy individuals, which can result in unwarranted costly and anxiety-provoking workup. A retrospective study was performed to determine the extent and impact of under-awareness of the DNP among clinicians in the hopes of identifying strategies for future intervention.

Methods: After obtaining institutional board review approval, a chart review was performed on all outpatient referrals for individuals identifying as Black or African American made to hematology oncology (HO) for neutropenia between 2020 and 2025 within the Aurora system. Individuals with a diagnosis of cancer, blood disorder, autoimmune disease, immunodeficiency, solid organ or stem cell transplant, or who were receiving chemotherapy, immunosuppression, biologic therapy, or other medications associated with neutropenia at or before the time of referral were excluded.

Results: 121 referrals met inclusion criteria. The mean ANC at the time of referral was 1.3 K/mcL. The mean age was 42. Forty-six patients (38%) were female. Six patients (5%) had reported at least one possible B symptom. Five patients (4%) had or reported lymphadenopathy. Five patients (4%) reported recurrent/frequent infections. No patients had Duffy testing prior to referral; after HO evaluation, 9 patients (7%) were tested, and 8 of these patients (89%) were Duffy null. The most common final diagnoses offered by HO were “neutropenia unspecified”, “other neutropenia”, and “congenital neutropenia”. No patients were diagnosed with an immunodeficiency, autoimmune disorder, malignancy, or clinically significant infection as a result of HO evaluation. No patients required treatment (e.g. G-CSF) for neutropenia.

Conclusion: These data highlight a knowledge gap of the DNP among referring clinicians as well as hematologists. In this study, evaluation for isolated apparent neutropenia in healthy Black/African American individuals did not lead to any serious or actionable diagnoses. Duffy phenotyping is a low-cost, routine blood bank test. Raising awareness of the DNP and the availability of Duffy phenotyping may help patients avoid unnecessary workup. This study sets the stage for future evidence-based interventions including provider and patient education. We hope to implement workflow alerts within our organization to remind providers of the DNP when referring patients for neutropenia. We also hope to use our findings to establish guidelines for the circumstances in which DNP individuals require referral to HO for further evaluation. A limitation of this study is its representation of only one healthcare system which may impact its generalizability.

OCTREOTIDE FOR END-OF-LIFE SYMPTON MANAGEMENT: A LITERATURE REVIEW OF EFFICACY IN MALIGNANT BOWEL OBSTRUCTION AND ASCITES

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Introduction: Malignant bowel obstruction (MBO) affects 3-15% of patients with advanced cancer, and malignant ascites requiring paracentesis occurs in about 8% of cancer patients near the end of life. Both conditions cause distressing symptoms that impair quality of life in hospice care. Octreotide, a somatostatin analog, is used for symptom control, but its efficacy and optimal use in this setting remain under review.

Methods: A PubMed search (2000-2024) using key words: "octreotide," "malignant bowel obstruction," "malignant ascites," "Palliative" and "hospice" was conducted. Studies included randomized controlled trials (RCTs), Cohort studies, and case series; pediatric studies were excluded.

Results: For MBO, Octreotide (100–300 μg subcutaneously every 8 hours or as continuous infusion) added to standard therapy (ranitidine, dexamethasone, parenteral hydration) was associated with less vomiting and nausea compared to standard therapies alone in a sample of 87 patients (Currow, 2015; Hisanaga, 2021). An added study of 47 patients showed symptom improvement in about 60-70% of patients (Hisanaga, 2021). Combination "triple therapy" with dexamethasone and metoclopramide further improved symptom control and oral intake in a small series (Walter, 2023).

For malignant ascites, octreotide did not delay paracentesis but improved symptoms such as bloating, discomfort, and dyspnea (Jatoi, 2012). Side effects related to octreotide use were usually mild- diarrhea and hyperglycemia. (Jatoi, 2012; Hisanaga, 2021).

Conclusion: Octreotide can be a useful tool in managing symptoms in MBO and malignant ascites and may be more effective than standard supportive management. Symptom management can potentially be improved through combination "triple therapy". Unfortunately, with malignant ascites there is no reduction in fluid accumulation. More research is needed to guide dosing and patient selection in hospice care.

PREVALENCE OF ALBUMINURIA AMONG US ADULTS WITH OBESITY AND ITS POSSIBLE IMPACT ON CHRONIC KIDNEY DISEASE SCREENING: A CROSS- SECTIONAL ANALYSIS OF NHANES 2003–2020

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Introduction: Albuminuria, an early sign of kidney dysfunction, is linked to both kidney disease progression and cardiovascular complications. Obesity, a well-known risk factor for chronic illnesses such as diabetes and hypertension, is also thought to contribute to kidney disease, though its exact relationship with albuminuria is not clearly established in literature. Although albuminuria screening is recommended for individuals with diabetes, it is not currently advised for the broader U.S. population with obesity—even though many of these individuals are hypertensive and could potentially benefit from albuminuria-lowering therapies. This represents a significant missed opportunity for early intervention and risk reduction.

Materials and Methods: This study analyzed data from NHANES (2003–2020), involving U.S. adults ages 18 and older. Among them 59,717 adults had both BMI and urine albumin results and hence were included in the study. Obesity was defined as BMI ≥30 kg/m2 and albuminuria levels were classified by urinary albumin-to-creatinine ratio (uACR) of ≥30mg/mg. Logistic regression, adjusted for sociodemographic factors and comorbidities, was used to evaluate the relationship between obesity and albuminuria. Kaplan-Meier curves and life tables assessed survival outcomes in individuals with and without albuminuria.

Results: Among those with albuminuria >40% were obese, mean age was 48.6years and 57% were females. Overall, Obesity affected 32.9% of participants. Obese individuals had a 36% higher likelihood of albuminuria (OR 1.36; 95% CI: 1.23–1.50; $p < 0.001$). Albuminuria was more common among women, racial minorities and those from low-middle income families. Comorbidities such as diabetes (24.6% vs. 6.5%) and hypertension (51.9% vs. 27.4%) were more frequent in those with albuminuria. However, only 26.6% received ACE/ARB treatment. Survival was significantly lower among obese individuals with albuminuria ($p < 0.001$). Survival declined progressively across albuminuria categories, with worse outcomes observed as albuminuria severity increased from mild to moderate to severe albuminuria.

Conclusion: Obesity is independently associated with increased prevalence of albuminuria and reduced survival among

U.S. adults. The underutilization of albuminuria reducing therapies highlights a critical gap in care. Enhanced screening and early intervention strategies are warranted for obese individuals to mitigate kidney-related and cardiovascular risks.

RISK FACTORS FOR ADVERSE OUTCOME FROM CULTURE-CONFIRMED CLOSTRIDIAL INFECTIONS IN AN ERA OF EMPIRICAL ANTIBIOTICS: A RETROSPECTIVE COHORT STUDY

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Managing sepsis relies on timely antimicrobial empiricism, which is considered crucial for improving clinical outcomes. However, in cases of clostridial infections, which are relatively rare, the effectiveness of empirical antibiotic therapy may be limited, especially for infections requiring definitive source control or involving toxin-elaborating species. This study aims to evaluate the impact of specific empirical antibiotic choices and the use of adjunctive treatments, such as anti-toxin therapy and surgical exploration, on clinical outcomes in patients with localized and bacteremic clostridial infections as well as risk factors associated with worse clinical outcomes. We conducted a single-center retrospective cohort study at Gundersen Lutheran Medical Center of all patients hospitalized between 2012 and 2023 with documented clostridial infections, excluding C. difficile. A total of 270 confirmed clostridial infections were included and categorized into bacteremia and localized infection groups. We found that choice of empirical antibiotics, including those with anti-toxin activity, had no significant associations with adverse clinical outcomes. However, after controlling for age and severity of illness, surgical exploration was associated with significantly lower odds of mortality (OR 0.34, 95%CI 0.11-0.89). These findings suggest that current empirical treatment strategies may not significantly influence the prognosis of clostridial infections. Finally, among all hypothesized risk factors for adverse outcomes, only a cancer diagnosis present at time of clostridial infection was associated with higher odds of mortality (OR 2.98, 95%CI 1.07,811) after controlling for age and severity of illness. Further research might aid in understanding the nuances of managing these infections.

Resident Posters

1) EVALUATING THE IMPACT OF STRUCTURED ONBOARDING PROGRAMS IN HOSPITAL MEDICINE: INSIGHTS FROM A NEEDS ASSESSMENT AND POST-IMPLEMENTATION SURVEY

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Background: Effective onboarding is critical for supporting hospital medicine clinicians in delivering high-quality care, fostering professional growth, and promoting retention. At Froedtert & the Medical College of Wisconsin (MCW), a November 2024 needs assessment revealed gaps in role clarity, preparedness, and integration for new hospitalist faculty and Advanced Practice Providers (APPs). In response, a structured onboarding program was implemented in January 2025. This study combines pre- and post-implementation survey data to evaluate the program's impact.

Methods: Two surveys were conducted:

- Needs Assessment (N=58): Distributed to existing faculty and APPs to identify onboarding gaps and improvement opportunities. Included Likert-scale and open-ended questions.
- Post-Implementation Survey (N=11): Targeted recent hires (6 faculty, 5 APPs; 10 recent graduates) to evaluate the new onboarding program across domains such as communication, training, integration, and satisfaction. Quantitative data were summarized using agreement percentages; qualitative responses were thematically analyzed.

Results: Needs Assessment Findings:

- 95% agreed onboarding has clear benefits.
- 69% associated onboarding with improved confidence, efficiency, and productivity.
- 30% cited better patient care navigation; 22% noted increased opportunities for professional growth.
- Respondents emphasized the value of a phased onboarding approach, peer support, and early schedule communication.
- 96% supported a buddy system; views on shadowing were mixed.

Post-Implementation Insights:

- 100% of recent hires felt welcomed; 91% felt supported during onboarding.
- 91% found the orientation informative and relevant, but only 55% felt fully confident afterward.
- Challenges included inconsistent training on systems and policies, limited preparation for nocturnists, and shadowing experiences that misaligned with clinical roles.
- Respondents recommended tailoring onboarding by clinical role and shift type, extending onboarding for gradual integration, and providing procedural training for credentialed hospitalists not on procedural teams.

Discussion: The structured onboarding program improved clinician integration, support, and satisfaction. However, feedback highlights a need for individualized approaches based on responsibilities. Suggestions included role-specific shadowing, clearer scheduling, specialized procedural tracks, and centralized onboarding handbooks.

Conclusion: Structured onboarding significantly enhances new clinician experience in hospital medicine. Ongoing refinements—such as tailored role-specific tracks, phased training, mentorship, and clearer communication—can further improve integration, satisfaction, and long-term clinician success.

Key Feedback Summary What Worked Well:

- Welcoming Culture: Respondents felt welcomed and supported by colleagues and leadership. A designated "buddy" was generally available.
- Clear Communication: Role responsibilities and expectations were clearly outlined.
- High Satisfaction: Most respondents felt confident and satisfied with their onboarding experience, particularly faculty hospitalists.
- Areas for Improvement:
- Training Gaps: Inconsistent training on hospital policies, systems, and technology tools. Clinical training effectiveness varied, especially for nocturnists.
- Scheduling & Structure: Onboarding schedules didn't always align with specific responsibilities. Duration could be optimized by reducing redundancy or extending training for gradual transition.

Specialized Role Needs:

- Nocturnist APPs lacked early, role-specific exposure.
- NAMO/AMO and proceduralist roles require more tailored content.
- Need for procedural training for hospitalists not on procedural teams.
- Resource Deficiencies: Comprehensive onboarding handbooks and navigable training materials.

Suggestions from Respondents:

- Consolidate and streamline onboarding days.
- Align shadowing with clinical duties.
- Provide early or concurrent training for nocturnist roles.
- Develop formal procedural training.
- Offer centralized manuals with expectations, policies, and resources.

2) IMPACT OF TEAM-BASED STAFFING MODEL AND GEOGRAPHIC LOCALIZATION ON PATIENT LIKELIHOOD-TO-REFER SCORES: A RETROSPECTIVE ANALYSIS

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Introduction: Patient satisfaction, often measured by the Likelihood-to-Refer (LTR) score, is a key quality metric in healthcare systems. Low LTR scores can indicate breakdowns in communication, continuity of care, and shared decision-making. Prior studies have demonstrated that improved provider–patient communication and team dynamics correlate with higher satisfaction. At Froedtert Hospital, a communication-focused intervention on one unit raised LTR from below 67% to 78%, exceeding the 76% benchmark. Similarly, systematic reviews affirm that provider experience and team structure are strongly associated with patient satisfaction.

Methods: We conducted a retrospective analysis of monthly LTR data, patient census, and survey response rates from June 2024 to April 2025. Special attention was paid to the impact of deploying a fully staffed medicine team (MT24) on January 23, 2025. We analyzed LTR trends before and after this date, with further stratification by patient location and team rounding assignment to assess the influence of geographic localization on satisfaction.

Results: The year-to-date (FY25) LTR score was 67%, below the institutional goal of 76%. The lowest scores (61%) occurred during summer 2024. Following the MT24 team's deployment, LTR improved steadily, reaching 78% in April 2025. Patient census remained stable, ruling out volume as a confounder. Survey response rates slightly declined in March-April, though this likely only modestly influenced monthly variability. Higher LTR scores were observed in units with geographically localized care teams (e.g., CFAC, 4NE), whereas units with fragmented or inconsistent team presence (e.g., 5SW, 5NE) consistently underperformed.

Conclusion: The rise in LTR scores following the MT24 team implementation suggests that team-based, geographically localized staffing models may significantly enhance patient experience. Although no formal communication training was introduced with MT24, the consistent presence of a dedicated team likely facilitated stronger patient-provider engagement, continuity of care, and trust. These findings align with existing literature highlighting the benefits of structured team models and support broader institutional efforts to improve patient satisfaction through unit-based staffing. Sustained improvements may be achieved by reinforcing team-unit alignment and introducing formal communication strategies.

3) PRIMARY POLYCYTHEMIA VERA AS THE CAUSE OF OCCIPITAL STROKE

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Polycythemia vera (PV) is a rare myeloproliferative disorder predominantly caused by an acquired mutation in the JAK2 gene affecting approximately 0.6 to 1.6 per million people in the United States. The symptoms involved are non-specific and can be difficult to discern particularly in geriatric populations with multiple comorbidities, though thrombosis is a common presenting feature. Here we describe the unique case of primary PV causing an occipital stroke in a geriatric patient.

An 83-year-old female with a past medical history of major neurocognitive disorder presented to the emergency department from her primary care physician's office due to functional decline with dizziness, vision changes, decreased appetite, and ataxia. During her outpatient appointment, an initial metabolic and infectious workup was completed and her healthcare power of attorney (HCPOA) was activated. She was referred to the emergency room when her labs showed a hemoglobin of 20 g/dL. A CT scan of the head revealed a right occipital subacute stroke. No thrombolytic therapy was administered given the patient's subacute presentation. Further vascular imaging and invasive stroke workup as well as therapeutic anticoagulation were declined by the HCPOA as it was felt these procedures and therapies were not in line with the patient's goals of care. Her inpatient labs continued to demonstrate erythrocytosis and thrombocytosis, initially thought to be hemoconcentration in the setting of presumed dehydration; however, the abnormalities persisted despite administration of fluids, prompting further workup. Genetic testing showed a positive JAK2 mutation diagnostic for PV. She was treated with therapeutic phlebotomy, but cytoreductive therapy was declined by her HCPOA due to side effects. Despite efforts to increase oral intake, she remained uninterested in eating and had ongoing distress due to her poor vision and neurocognitive deficits. She was ultimately discharged to hospice care.

PV was an unexpected finding in this patient as the etiology of her stroke given she had no history of elevated hematocrit. Additionally, she had comorbid major neurocognitive disorder making it difficult for her to report many of her symptoms. Another unique aspect of the case was how the patient's functional status and goals of care influenced the diagnostic workup of her stroke. The patient's stroke was considered to be embolic; however, it is unclear how much her myeloproliferative disorder versus cardiovascular factors may have contributed to this development given that a comprehensive workup was declined by her HCPOA. Finally, the patient's goals of care had a unique influence on the management of her PV. Cytoreductive therapy and anticoagulation were declined to minimize treatment complexity and side effects although she was a high-risk patient with an older age at diagnosis and thrombotic event likely caused by PV. Thus, serial phlebotomy was the primary therapeutic strategy utilized. With the continual lengthening of the human lifespan, more patients will likely live to develop myeloproliferative diseases like PV. As a result, it is important that physicians recognize the systemic effects of PV while balancing the risks and benefits of its therapies and diagnostic procedures along with the goals of care of patients.

4) A RARE CASE OF EXTRANODAL LYMPHOMA INVOLVING THE TRACHEA

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Introduction: Natural killer/T-cell lymphoma (NKTL) is a rare Epstein-Barr virus (EBV) associated lymphoproliferative disease, accounting for only <2% of T-cell lymphomas. The disease develops from the transformation of natural killer (NK)-cells or cytotoxic T-cells. It is relatively common in Asia, but less common in Europe and North America. NKTLs can be classified as either nodal (nNKTL) or extra nodal (eNKTL) with each form differing s in clinical, patho-physiological, and genetic features. Here, we present a rare case of eNKTL with invasive localized disease that involved the proximal third of the trachea.

Case: A 50-year-old male with a history of OSA, asthma, and chronic sinusitis presented with a chronic cough, intermittent fevers, with blood-tinged sputum production over the previous 8-10 months. His symptoms did not improve with an initial course of antibiotics and steroids. In addition, he reported an unintentional weight loss of 40 lbs over the past few months. With worsening symptoms, he initially presented to an outside hospital's ED. There, he was started on antibiotics and had a chest CT that showed a large circumferential tracheal mass concerning for malignancy. Subsequent biopsy with bronchoscopy was unrevealing, suggesting relapsing polychondritis. He was transferred to our hospital for further workup given the concern for necrotic features and distorted tracheal architecture that were visualized during the bronchoscopy.

At our hospital, he had repeat bronchoscopy with biopsy and pathology returned as extra-nodal/NK lymphoma. PET CT was performed, which showed a tracheal mass consistent with lymphoma with no evidence of distant metastasis. There was concern for possible tracheal perforation with starting treatment given encapsulation of the trachea by lymphoma. A prophylactic G tube was placed without complication. Inpatient chemotherapy and a fraction of radiation was administered prior to discharge. Patient discharged in stable condition and with outpatient referral to Hematology.

Discussion: This case represents a rare manifestation of eNKTL involving the trachea. The initial differential diagnosis was broad including malignancy, relapsing polychondritis given patient's medical history of chronic sinusitis, and infection/mediastinitis given history of intermittent fevers. The first biopsy at the outside hospital was unrevealing, but since suspicion for malignancy was high, a second biopsy was attempted, which ultimately revealed tracheal eNKTL. Interdisciplinary expertise was needed to help mitigate the risks associated with definitive treatment with chemoradiation given the location of the mass in trachea and high risk for respiratory compromise.

Following his initial hospital stay, he completed concurrent chemotherapy and site-specific radiation. His post hospitalization course was complicated by tracheal stenosis requiring interventional pulmonology to place ongoing tracheal stent. Unfortunately, his disease relapsed with new extensive sinus/oral disease and liver lesions. He is currently receiving the next line of chemotherapy and is undergoing allogenic transplant workup for long term disease control.

5) INTERPLAY OF PARVOVIRUS B19 AND HIV LEADING TO A HEMOGLOBIN OF 1.4

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Introduction: Pure Red Blood Cell Aplasia (PRCA) is a rare hematologic disorder characterized by a marked reduction or absence of erythroid precursors in the bone marrow. This leads to a normocytic, normochromic anemia with severely decreased reticulocyte count, while white blood cell and platelet production remain unaffected. PRCA may be congenital or acquired, with causes including autoimmune diseases, thymoma, viral infections (notably parvovirus B19), lymphoproliferative disorders, or medications.

Case description: We present a case of a 31-year-old male with poorly controlled HIV who presented after a near-syncopal event upon standing. He reported progressive fatigue and lightheadedness over the prior month. On arrival, he was hemodynamically stable. Labs revealed severe normocytic anemia with a hemoglobin of 1.5 g/dL (repeat 1.4 g/dL), hematocrit 4.5%, and erythropoietin >7500. Iron, ferritin, and percent saturation were elevated; TIBC was normal. Haptoglobin and LDH were mildly elevated. Absolute reticulocyte count was 2, with a reticulocyte index of 0.0. HIV evaluation showed a CD4 count of 9 and viral load of 22,000. Parvovirus B19 IgM and PCR were positive, confirming the cause of PRCA. A bone marrow biopsy was suggested but was declined by the patient. He was transfused with five units of packed red blood cells and discharged on day five once his hemoglobin stabilized above 7.0. He has since enrolled in Linkage to Care Services, a program facilitating access to medical and social support for individuals with HIV and has started taking his Antiretrovirals regularly. His most recent hemoglobin was 14.5 g/dL.

Discussion: This case highlights how an impaired humoral response seen in uncontrolled HIV can exacerbate parvovirus infection resulting in profound PRCA. This patient responded well to packed red blood cells, and did not require IVIG. Additionally, it shows how individuals with chronic anemia can remain hemodynamically stable despite such a low hemoglobin.

6) CASE OF HEMORRHAGIC SHOCK DUE TO DUODENAL DIEULAFOY LESION

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Introduction: A Dieulafoy lesion is a rare vascular malformation of the gastrointestinal (GI) tract, where an enlarged submucosal blood vessel protrudes through the mucosa without underlying ulceration or erosion. The exposed vessel can rupture and cause life-threatening hemorrhage, which causes about 1-2% of all GI bleeding. Most lesions are found in the stomach, but can rarely arise in the duodenum, colon, jejunum, esophagus, or surgical anastomosis sites. Diagnosis is made by direct endoscopic visualization. Endoscopic interventions include epinephrine injection, hemostatic clip placement, thermal coagulation, and band ligation. If endoscopic intervention fails, embolization by interventional radiology can be considered. We highlight a diagnostically challenging case of a Dieulafoy lesion causing hemorrhagic shock in a patient with complicated GI history, requiring aggressive resuscitation and successful endoscopic treatment.

Case: A 50-year-old male with coronary artery disease, focal segmental glomerulosclerosis resulting in end stage renal disease s/p kidney transplant, and segmental bowel resections due to calcifications with resultant end ileostomy, parastomal herniation, and short gut syndrome presented with dark red blood in his ostomy bag. Initial esophagogastroduodenoscopy (EGD) noted a dilated duodenum with blood and multiple non-bleeding jejunal diverticula. Computed tomography (CT) showed soft tissue emphysema within the ostomy, parastomal hernia, and surrounding abdominal wall soft tissue. Clopidogrel was held and IV pantoprazole was started. He required multiple blood transfusions at an outside hospital. He was transferred to our tertiary care center due to concern for possible small bowel bleeding and surgical revision of ileostomy and parastomal hernia. Repeat EGD and ileoscopy did not identify a bleeding source but did demonstrate oozing peristomal tissue. Colorectal surgery was consulted and did not think the peristomal site was clinically significant and recommended against stomal repair. Two days later, he rapidly developed bloody output in his ostomy and was transferred to the ICU for hemorrhagic shock, where he received 21 units of blood products over 24 hours. Urgent bedside enteroscopy in the ICU revealed an actively bleeding Dieulafoy lesion, which was injected with epinephrine with transient improvement, followed by three hemostatic clips with resolution of bleeding. His course was complicated by acute renal failure from shock, requiring multiple dialysis sessions before his renal function returned to baseline prior to discharge.

Discussion: Undiagnosed Dieulafoy lesions can cause significant morbidity and mortality due to the severity and abrupt onset of GI bleeding. Diagnosis can be challenging due to difficult visualization and the intermittent nature of bleeding. In this patient, an extensive GI surgical history of multiple bowel resections, end ileostomy, and parastomal herniation added to the complexity in localizing the bleed. The initial differential diagnosis was broad and included ischemia based on CT imaging, diverticular bleeding, and stomal ulceration due to mechanical shearing from parastomal herniation. However, early endoscopic interventions did not identify a bleeding source. In undiagnosed cases of GI bleeding, the differential should be expanded and include rare causes like Dieulafoy lesions, especially those in atypical locations. As seen in this case, repeat endoscopic evaluations may be necessary before landing on a diagnosis and delivering lifesaving treatment.

7) A RARE CASE OF VIRAL MYOSITIS SECONDARY TO MUMPS INFECTION

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Introduction: Mumps is an acute viral illness known to commonly cause parotitis and less commonly orchitis, meningitis, pancreatitis and sensorineural hearing loss. However, with the widespread use of the measles-mumps-rubella (MMR) vaccine, the incidence of mumps infection has decreased significantly. Myositis is muscle inflammation presenting as muscular pain, swelling, weakness, and elevated creatine kinase (CK) levels. Influenza and enteroviruses are common causes of viral myositis with few known cases of mumps myositis in the literature. Here, we present a rare case of a viral myositis due to mumps infection in a previously healthy individual with unknown MMR vaccination status.

Case: A 65-year-old functionally independent male with type 2 diabetes presented with one month of worsening bilateral lower extremity weakness and bilateral thigh pain. He also reported a week of painful scrotal swelling with dysuria. Physical exam was notable for 2/5 strength, 2+ pitting edema, tenderness in bilateral lower extremities and scrotal swelling. Initial labs were notable for leukocytosis, elevated inflammatory markers and normal CK level. Neurology and rheumatology specialties were consulted on admission given concern for an underlying neurological or autoimmune process. MRI of the bilateral thighs showed diffuse intramuscular edema in the anterior thigh, so a systemic process was favored. Rheumatologic workup including ANA, extended myositis panel, paraneoplastic antibody screen, MPO/PR3, cryoglobulins and complement levels were normal. An electromyogram (EMG) showed no evidence of myopathy or radiculopathy. With concern for inflammatory or viral myopathy, neurology recommended a 5-day course of empiric intravenous immunoglobulin (IVIG) treatment. The patient noted some clinical improvement in lower extremity weakness prior to IVIG with continued improvement after, so muscle biopsy was deferred. Due to scrotal swelling and tenderness, ultrasound of testes was ordered and revealed bilateral hydroceles and epididymitis. Infectious disease team was consulted and recommended empiric course of antibiotics for epididymitis. After discharge, infectious workup was notable for positive mumps IgG, IgM antibodies and elevated Coxsackie B virus type 4 antibody titer of 1:160. With outpatient therapy over the next few months, patient slowly returned to his baseline functional status.

Discussion: The initial presentation was concerning for an autoimmune or paraneoplastic myopathy, but a complete neurologic and rheumatologic workup was negative. Scrotal swelling prompted an expanded infectious workup, which suggested recent mumps infection as cause of myositis due to positive antibodies. Despite having a slightly elevated Coxsackie B variant antibody titer, this cannot distinguish between past or current infection. Moreover, a positive mumps IgM strongly indicates a recent infection, and scrotal swelling provided a relevant clinical feature of mumps. However, a co-infection of mumps and coxsackie viral infection cannot be entirely excluded. While empiric IVIG was administered, the initial improvement in symptoms prior to IVIG treatment and full functional recovery post discharge suggest natural resolution of inflammation from likely viral cause. However, normal CK and EMG results seen here are atypical features of viral myositis. Overall, this case highlights a presentation of mumps associated myositis and the importance of considering vaccine preventable diseases in under vaccinated communities or older adults with waning immunity.

8) MYCOPHENOLATE MOFETIL-RELATED COLITIS: AN ABNORMALLY LATE-ONSET CASE OF POST-TRANSPLANT DIARRHEA

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Mycophenolate mofetil (MMF) is an immunosuppressive agent that suppresses both cell-mediated and humoral immune responses by inhibiting inosine monophosphate dehydrogenase, a critical enzyme implicated in the synthesis of guanine nucleotides. MMF is a commonly encountered medication in renal transplant recipients, as it has been shown not only to reduce the incidence and severity of acute rejection episodes, but also to improve long-term graft function. Despite its efficacy, MMF has been implicated with numerous gastrointestinal side effects including abdominal pain, diarrhea, and less commonly, colitis. The latency period between initiation of MMF exposure and the onset of colitis is between six months to 15 years with the average being three years.

The case report to follow describes a 53-year-old male with a history of end stage renal disease after two renal transplants that was maintained on MMF, tacrolimus, and prednisone since his initial transplant 12 years prior. He presented to the emergency room with a one-week history of intractable watery diarrhea. Labs revealed an acute kidney injury which prompted hospital admission for further evaluation and management. Initial infectious work-up for viral etiology on admission was notable only for positive cytomegalovirus (CMV) nucleic acid amplification testing which led to gastroenterology consultation to evaluate for CMV colitis. Colonoscopy revealed patchy areas of colitis throughout the entire colon noted to be most prominent in the right and transverse colon. Histologic examination revealed active inflammation with cryptitis, surface epithelial injury, mucosal edema, and patchy neutrophilic infiltrate in the lamina propria in all sampled sites for biopsy. These findings are all consistent with previously reported cases of MMF-related colitis. Importantly, CMV immunostaining on the biopsy specimens were negative, and there was no histologic evidence of microscopic colitis or chronic inflammatory bowel disease. Over the patient's ten-day hospital course, both MMF and tacrolimus were held. Tacrolimus was re-initiated on hospital day 6 following assessment of trough levels. MMF was held indefinitely and replaced with azathioprine, with symptom improvement endorsed by the patient on discharge.

The timing of this patient's onset of symptoms of MMF-related colitis is unique relative to the already small number of cases reported. Additionally, in the absence of universally accepted society guidelines, long-term study of the natural course of MMF colitis is warranted to guide immunosuppressive therapy in patients receiving MMF, as this medication is a backbone of renal transplant therapy.

9) AN OVERVIEW OF NIVOLUMAB SAFETY PROFILE: A META-ANALYSIS

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Background: Immune checkpoint inhibitors (ICIs), like nivolumab, have revolutionized cancer treatment. However, they can cause side effects where the immune system attacks healthy parts of the body called immune-related adverse events (irAEs). It is important to understand the frequency and severity of these side effects, especially the ones affecting the major organs. This study looks at side effects linked to nivolumab by reviewing clinical trial data.

Methods: We searched medical databases like PubMed, ClinicalTrials.gov, and major cancer conference reports (ASCO, ESMO) for randomized clinical trials (RCTs) up to June 2025. We systematically reviewed clinical trial data of nivolumab-based regimens, comparing adverse event profiles with those of chemotherapy and targeted therapies. Odds ratios (ORs) and 95% confidence intervals (CIs) were used to quantify risk.

Results: Nivolumab demonstrated increased risks of serious Grade ≥3 organ-specific irAEs compared to control therapies. Pneumonitis occurred with an OR of 3.05 (95% CI: 1.78–5.23), colitis with an OR of 5.92 (95% CI: 1.81–19.34), and hepatitis with an OR of 6.08 (95% CI: 2.36–15.68). Endocrinopathies, nephritis, and myocarditis were less frequent but consistently more common in nivolumab-treated patients. General immune activation symptoms were also more prevalent. Rash was reported with an OR of 2.19 (95% CI: 1.68–2.85), pruritus with an OR of 2.22 (95% CI: 1.57–3.14), and fatigue was frequently observed across trials, though not always quantified. Diarrhea and low-grade fever were common, often preceding more severe irAEs. Musculoskeletal adverse events were significantly increased. Arthralgia had an OR of 2.22 (95% CI: 1.80–2.73), musculoskeletal pain an OR of 1.94 (95% CI: 1.49–2.51), and myositis an OR of 3.65 (95% CI: 2.36–5.64). These events contributed to functional limitations and occasionally required corticosteroid therapy. Although total treatment-related adverse event rates were sometimes similar to chemotherapy, the immune-mediated nature of toxicities with nivolumab necessitated distinct management strategies.

Conclusion: Nivolumab is associated with a clinically meaningful spectrum of immune-related toxicities, with significantly increased risks for pneumonitis, colitis, hepatitis, cutaneous reactions, and musculoskeletal symptoms. These updated findings highlight the importance of vigilant monitoring and early intervention to ensure safe and effective use of immune checkpoint inhibitors in oncology.

10) NON-BILIOUS, EXUDATIVE ASCITES FOLLOWING LAPAROSCOPIC CHOLECYSTECTOMY IN A YOUNG FEMALE

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Background: Ascites is a rare postoperative complication following laparoscopic cholecystectomy and is typically associated with bile leak, lymphatic duct injury, hepatic decompensation, ovarian hyperstimulation syndrome, infections, peritoneal inflammatory reactions, or malignancies. We present a rare case of persistent, non-bilious, lymphocytic, exudative ascites in a young female without cirrhosis or biliary injury, posing significant diagnostic and management challenges. To the authors' knowledge, this is the first reported case of persistent non-bilious ascites following laparoscopic cholecystectomy.

Case Presentation: A 33-year-old woman with a history of generalized anxiety disorder and past alcohol use disorder presented 14 days post-cholecystectomy with progressive abdominal distention and pain. Physical examination revealed large-volume ascites. Initial diagnostic paracentesis demonstrated a low serum-ascites albumin gradient of < 1.1 g/dL, high protein content, and lymphocyte-predominant fluid. Ascitic fluid cultures and cytology were repeatedly negative for infection and malignancy.

Despite a significantly elevated cancer antigen 125 (peak 1942 U/mL) and a family history of ovarian cancer in her mother, transvaginal ultrasound and multiple cytologic analyses ruled out malignancy. Imaging, including computed tomography, magnetic resonance cholangiopancreatography, and lymphoscintigraphy, showed no biliary or lymphatic leak. Endoscopic retrograde cholangiopancreatography confirmed no leak, although a metal stent was placed prophylactically due to cannulation-induced inflammation. Liver elastography revealed increased stiffness suggestive of portal hypertension, however, there was no clinical or radiologic evidence of cirrhosis. Viral, autoimmune, and metabolic liver workups were unremarkable.

The patient required frequent large-volume paracenteses over several months. Diuretic therapy offered minimal relief. The etiology of her ascites was deemed idiopathic after an extensive workup excluded possible causes. It is presumed to represent a post-surgical inflammatory process; however, such inflammation is typically self-limiting and not commonly associated with prolonged or recurrent ascites.

Conclusion: In patients presenting with ascites after cholecystectomy, a thorough evaluation for biliary injury, infection, liver pathology, and malignancy is critical. This case illustrates the diagnostic complexities when typical causes are excluded. Further research is needed to elucidate the pathogenesis and optimal treatment strategies for such rare post-surgical complications.

11) A DEEP NECK SPACE INFECTION AND THE UNSUSPECTED CULPRIT

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Our patient is a 48-year-old female with a history of psoriasis and psoriatic arthritis (not on immunosuppressive agents) who presents with acute onset of fevers (Tmax 102F), chills, sore throat, nuchal rigidity, and bilateral anterior neck pain and swelling for one day. She reports the pain is so severe it resulted in nausea and vomiting. She has had no sick contacts and lives in a multi-generational household with a 7-month-old granddaughter who does not attend daycare. Otherwise, there is no history of recent dental cleanings or procedures. Her last surgery was a parathyroidectomy in 2022.

On presentation, her vitals were all within normal limits. Her physical exam revealed exquisite neck tenderness to soft palpation, bilateral anterior neck swelling, and inability to fully open her mouth. There was no observable erythema or drainage to the overlying skin. She remained well-appearing and was alert and oriented without signs of encephalopathy. Of note, she had no observable rashes. Notable labs include a leukocytosis with left shift (WBC 21.2, ANC 16.8), elevated creatinine 2.71 (baseline 0.7), elevated transaminases (AST 59, ALT 85), and elevated inflammatory markers (CRP 53.7, ESR 69). Her urinalysis, MRSA swab, and bHCG were all negative. Pertinent imaging included a CT neck with contrast which showed extensive trans-spatial fat stranding along the bilateral deep neck spaces with retropharyngeal edema into the superior mediastinum, but no drainable fluid collection. CT maxillofacial with contrast showed no sublingual or submandibular abscess. A doppler US of the neck was negative for deep venous thrombosis in the bilateral internal jugular veins. ENT and thoracic surgery both did not recommend surgical intervention and she was admitted for IV antibiotic therapy for deep neck space infection without abscess. She was started on vancomycin, ceftriaxone and metronidazole after blood cultures were drawn. Deep neck space infections are often polymicrobial, caused commonly by Streptococcus pyogenes, Staphylococcus aureus, and anaerobes. However, surprisingly, her blood cultures were positive for Neisseria meningitidis, confirmed with 16S testing. She symptomatically improved quickly on ceftriaxone monotherapy and was transitioned to ciprofloxacin for outpatient treatment.

Our patient represents a rare case of deep neck space infection caused by N. meningitidis. This case reinforces the importance of keeping a broad differential, considering predisposing risk factors such as close living quarters, and remembering that N. meningitidis commonly colonizes the nasopharynx and oropharynx asymptomatically. Pharyngeal colonization is a prerequisite for invasive disease even though this is uncommon. Ultimately, her husband was treated with one dose of ciprofloxacin for prophylaxis and both individuals were counseled on receiving vaccinations.

12) STAINED GLASS: A PAIN IN THE... KIDNEY

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"Fanconi syndrome" is a disorder marked by damage to the proximal convoluted tubule resulting in salt wasting and metabolic acidosis. While there are genetic causes of Fanconi syndrome, the most common causes of Fanconi syndrome in adults are acquired and include certain drugs (anti-cancer drugs, antibiotics, anti-metabolites, anticonvulsants, etc), gammopathies (multiple myeloma and MGUS), and heavy metal toxicity. Clinically, Fanconi Syndrome presents with symptoms associated with electrolyte deficiencies (dysrhythmia, generalized weakness, nausea, emesis, fatigue, paresthesia, tremor, and thirst). Here we present a 78-year-old female with a nearly wholly benign PMHx initially admitted with abdominal pain, nausea, and emesis thought to be secondary to pancreatitis. Her serum labs showed hypokalemia, hypophosphatemia, hyperchloremia, and a non-anion gap metabolic acidosis. When her salt derangements did not correct with supplementation, urine studies were obtained showing K/P wasting, pH of 6.5, and pigment. Fanconi syndrome was diagnosed. The patient denied exposure to Fanconi-associated drugs and to heavy metals. Work up showed no evidence of gammopathies or amyloidosis. She was started on NaCO3 and KCO3 and discharged. The patient sadly stopped her K/NaCO3 regimen and she presented back to our ED with weakness, nausea, emesis, fatigue, paresthesia, and thirst roughly six months later. Work up showed CPK around 1000 as well as serum and urine findings similar to the previous admission's. After hearing that she had stopped her salt supplementation, the diagnosis this time was obvious. Less obvious was the upstream cause of her Fanconi syndrome. Our team repeated light chains to look for gammopathy to no avail. The patient continued to deny occupational exposure to causative drugs and heavy metals. We eventually inquired about her hobbies and she told us that she spent a good deal of time making stained glass artwork… which involved soldering a lead amalgam without PPE to fuse the cut stained glass pieces together. A serum lead level came back elevated. The lead level also explained her pigment nephropathy and elevated CPK as lead is known to cause myopathy. This case illustrates the importance of considering patient lifestyle factors during diagnosis; it also shows that patient history is often the most important tool and that collecting additional history is often necessary to achieve a unified diagnosis. This patient was provided counseling on PPE and discharged with her electrolyte replacement regimen. She continues to make stained glass today... with PPE.

13) BLEEDING EVENTS IN ATRIAL FIBRILLATION AMONGST PATIENTS TAKING DOACS CONCURRENTLY WITH RATE CONTROL MEDICATIONS

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Direct oral anticoagulants (DOACs) are often used to lower the risk of cardioembolic events in patients diagnosed with atrial fibrillation or atrial flutter. The most commonly used DOACs (apixaban and rivaroxaban) are metabolized for systemic elimination by hepatic enzyme CYP3A4. There is another DOAC, dabigatran, which is primarily renally excreted and thus is not influenced by the activity of any hepatic CYP molecule. Rate controlling medications such as non-dihydropyridine calcium channel blockers (like diltiazem) or such as beta-blockers (like metoprolol) are also mainstays of treatment in atrial fibrillation. Notably, diltiazem inhibits CYP3A4 while metoprolol has no such effect. Therefore, there is a theoretical drug interaction when apixaban/rivaroxaban and diltiazem are used concurrently as the inhibition of the CYP3A4 hepatic elimination mechanism may lead to supratherapeutic serum levels of the anticoagulants thereby predisposing the patient to bleeding events. There should be no such interaction in patients concurrently taking apixaban/rivaroxaban with metoprolol or in patients using dabigatran with any rate control drug (as dabigatran is renally excreted rather than hepatically excreted). Our project retroactively examined over 5000 charts of Gundersen atrial fibrillation patients who were using either diltiazem or metoprolol for rate control along with either apixaban/rivaroxaban or dabigatran for anticoagulation. The charts were analyzed for one year after the initiation of the rate control drug for the primary outcome: a composite of bleeding related hospitalizations and death. The four groups analyzed were patients taking apixaban/rivaroxaban with diltiazem, apixaban/rivaroxaban with metoprolol, dabigatran with diltiazem, and dabigatran with metoprolol. After statistical analysis, the results showed no significant differences in bleeding risk between the groups. This should put physicians' minds at ease when deciding on rate control options; if there is a true increased risk of bleeding with diltiazem with apixaban/rivaroxaban that went undetected, then it is likely slight enough to be clinically irrelevant. Whichever rate control option makes the most sense for the individual patient (for example, a desire to avoid bronchospasm in patients with COPD is a common reason that patients are prescribed diltiazem over metoprolol) is the one that should be used—the theoretically increased risk of bleeding should not factor into the decision given the clinically insignificant and statistically insignificant bleeding risk.

14) THE BURDEN OF COEXISTING PRIMARY BILIARY CHOLANGITIS IN CHRONIC VIRAL HEPATITIS C: A PROPENSITY-MATCHED ANALYSIS USING TRINETX

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Background: Primary biliary cholangitis (PBC) is a chronic autoimmune liver disease that can coexist with chronic viral hepatitis C (HCV), potentially creating a dual burden of liver injury. The clinical impact of concurrent PBC in patients with chronic HCV remains incompletely characterized. This study aimed to compare clinical outcomes between chronic HCV patients with and without coexisting PBC.

Methods: We performed a retrospective cohort study using the TriNetX Global Collaborative Network, accessing electronic medical records from 146 healthcare organizations. Patients with chronic viral hepatitis C (ICD-10 code B18.2) were stratified into two groups: those with coexisting PBC (ICD-10 code K74.3) and those without PBC. After propensity score matching for baseline demographics and comorbidities, cohorts of 2,036 patients each were analyzed. The primary outcome was all-cause mortality. Secondary outcomes included heart failure, chronic kidney disease, atrial fibrillation, cerebrovascular disease, pulmonary embolism, hospital admission, acute myocardial infarction, pulmonary hypertension, coronary artery disease, diabetes mellitus, liver cirrhosis, and hypertension. Outcomes were analyzed using risk analysis and Kaplan-Meier survival analysis with hazard ratios (HR) and 95% confidence intervals (CI) over a five-year follow-up period.

Results: In this propensity-matched cohort study, patients with coexisting PBC demonstrated significantly higher all-cause mortality compared to HCV-only patients (23.2% vs 16.1%; HR 1.484, 95% CI 1.288-1.709; p<0.001). PBC coexistence was associated with increased incidence of chronic kidney disease (15.7% vs 10.6%; HR 1.571, 95% CI 1.299-1.898; p<0.001), pulmonary hypertension (5.6% vs 3.7%; HR 1.587, 95% CI 1.176-2.143; p=0.002), diabetes mellitus (12.1% vs 9.5%; HR 1.335, 95% CI 1.066-1.673; p=0.012), and liver cirrhosis (30.9% vs 17.4%; HR 2.013, 95% CI 1.653-2.451; p<0.001). No significant differences were observed in heart failure, atrial fibrillation and flutter, cerebrovascular disease, pulmonary embolism, acute myocardial infarction, or coronary artery disease between groups.

Conclusion: In chronic HCV patients, coexisting PBC significantly increases mortality risk and the burden of extrahepatic complications, particularly chronic kidney disease, pulmonary hypertension, and diabetes mellitus. These findings suggest that PBC represents a major comorbidity modifier in chronic HCV, warranting enhanced surveillance and comprehensive management strategies for patients with dual liver disease.

15) EFFICACY AND SAFETY OF SUBCUTANEOUS VERSUS INTRAVENOUS ANTI-TNF AGENTS IN ULCERATIVE COLITIS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Background: Subcutaneous (SC) and intravenous (IV) anti-tumor necrosis factor (anti-TNF) therapies are cornerstones for moderate-to-severe ulcerative colitis (UC). However, comparative efficacy and safety profiles remain underexplored due to limited head-to-head trials. This systematic review and meta-analysis evaluates the efficacy and safety of SC versus IV anti-TNFs in achieving clinical remission in UC.

Methods: We searched PubMed, Scopus, Web of Science, Embase, and Cochrane Central from inception to May 2025 for randomized controlled trials (RCTs) and observational studies comparing SC (adalimumab, golimumab, CT-P13 SC) and IV (infliximab, CT-P13 IV) anti-TNFs in adults with moderate-to-severe UC (Mayo score ≥6). Primary efficacy outcome was clinical remission (Mayo score ≤2, no subscore >1) at 6–14 weeks (induction) and 30–54 weeks (maintenance). Safety outcomes included adverse events (AEs) and serious AEs (SAEs). Direct comparisons were pooled using random-effects meta-analysis; indirect comparisons used network meta-analysis with shared placebo arms. Risk of bias was assessed using Cochrane and ROBINS-I tools.

Results: Nine studies (5 RCTs, 4 observational; n=3,201) were included. Direct comparisons (3 observational studies, n=620) showed no significant difference in remission at week 14 (odds ratio [OR] 1.12, 95% CI 0.89–1.41) or week 52 (OR 0.98, 95% CI 0.76–1.27). Network meta-analysis of RCTs (n=2,581) suggested comparable efficacy for SC versus IV anti-TNFs at week 8 (OR 1.15, 95% CI 0.85–1.56) and week 52 (OR 1.08, 95% CI 0.79–1.47). Safety analysis indicated similar AE rates (SC: 45.3% vs. IV: 47.1%; OR 0.94, 95% CI 0.78–1.14) and SAE rates (SC: 8.2% vs. IV: 9.1%; OR 0.90, 95% CI 0.65–1.24). Subgroup analyses by biologic-naïve status were consistent. Heterogeneity was moderate (I^2=45%).

Conclusions: SC and IV anti-TNFs show comparable efficacy and safety in achieving and maintaining UC remission. These findings support personalized treatment decisions based on administration route and patient preference. Head-to-head RCTs are needed to confirm these results.

16) A RARE CASE OF A RASH: ROWELL SYNDROME

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Introduction: Rowell Syndrome (RS) is a rare disease with limited data. The hallmark of RS is the overlap of lupus erythematosus and erythema multiforme. Typical immunologic findings include: speckled ANA pattern, SSA/SSB positivity, and RF (+). Diagnosis can be made based on meeting all major and one minor disease defining criteria. Major criteria include the presence of systemic or cutaneous lupus erythematosus, positive ANA, and erythema multiforme like lesions. Minor criteria include chilblains and SSA or SSB or RF positivity.

Case Report: A 72-year-old female presented with 6-year history of intermittent photosensitive facial rash. She had undergone extensive work-up including several skin biopsies that indicated prurigo nodularis vs lupus vs dermatomyositis and had tried various therapies including methotrexate, mycophenolate, and hydroxychloroquine. Documentation demonstrated good response to hydroxychloroquine. Approximately 8 months prior to presentation, she saw dermatology and was thought to have a phototoxic drug reaction secondary to allopurinol given negative ANA and normal c3/c4 levels ruling against a lupus associated rash. Her allopurinol and hydroxychloroquine were discontinued at that time. Three months later she was further evaluated by rheumatology and based on SSA positivity, she was diagnosed with Sjogren's syndrome with photosensitive rash prompting re-initiation of hydroxychloroquine. On admission she had a severely painful and pruritic flare of her rash which started approximately 1 month prior. Rash was notable for extensive ulcerated plaques overlying her bilateral cheeks and scattered annular pink plaques with scale, some with central erosion, overlying her arms and torso. Lab work-up revealed ANA ab speckled 1:80, ANA by IFA 1:160 homogenous, DSDNA (-), RF <15, C3/C4 within normal limits, SSA 625, unremarkable dermatomyositis panel, histone antibody weakly (+), normal 24hr urine protein, cardiolipin and beta 2 glycoprotein antibodies within normal limits, HSV PCR (-). Additionally, she endorsed dry mouth, 60-pound weight loss over the last 1.5 years, and IBS symptoms. Otherwise, her rheumatologic review of systems was negative.

During admission, she underwent 4 mm punch biopsies of rash on her left lateral neck and left forearm. Biopsies demonstrated an eruptive bullous violaceous red and erythema multiforme-like plaques in photosensitive distribution with negative direct immunofluorescence. Differential diagnosis included: bullous subcutaneous lupus erythematosus vs drug eruption vs RS. Diagnosis of RS was confirmed given biopsy results with erythema multiforme like changes and positive ANA and SSA, meeting major and minor criteria. She was initiated on high dose steroids with improvement. Over the following months she underwent a slow steroid taper and was initiated on topical pimecrolimus in addition to monthly anifrolumab as an outpatient with good clinical response.

Discussion: Classic erythema multiforme is typically secondary to a trigger, with common triggers including: HSV, mycoplasma pneumoniae, and drugs such as anti-inflammatories, antibiotics, and antiepileptics.

It is possible for patients with lupus erythematosus to develop classic erythema multiforme without having an actual overlap syndrome, however, when RS criteria are met and there is no known trigger for erythema multiforme, RS should be considered. Treatment of Rowell syndrome typically consists of steroids initially with addition of rituximab, hydroxychloroquine, or targeted biologics.

17) RECURRENT REACTIVE INFECTIOUS MUCOCUTANEOUS ERUPTION (RIME) IN A YOUNG ADULT: A CASE STUDY HIGHLIGHTING CLINICAL AWARENESS AND MANAGEMENT

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Introduction: Reactive Infectious Mucocutaneous Eruption (RIME) is a severe mucocutaneous reaction occurring predominantly in children following a bacterial or viral respiratory infection, most commonly Mycoplasma pneumoniae. Here, we present a case of RIME in a young adult to increase clinical awareness of this disease in adults.

Case Description: A 21-year-old male presented to an urgent care for painful oral sores. The week before, he felt ill with a sore throat, dyspnea and fevers and was prescribed amoxicillin and doxycycline for pneumonia by his PCP. He now developed difficulty speaking and odynophagia in addition to a lesion on the penile tip with associated dysuria.

In the ED, his vitals were within normal limits and initial labs were negative for monospot, rapid strep, Flu/Covid/RSV. Physical exam was notable for prominent conjunctival injection; ulcerations of cutaneous and mucosal lips, tongue, and buccal mucosa with dried yellow and white crust and sloughing of the tongue; and a pink, round erosion on the penile meatus.

Given involvement of multiple mucosal surfaces, the patient was transferred to a large regional hospital to obtain dermatology and ophthalmology evaluations. Dermatology suspected the patient's presentation was consistent with RIME, with mucosa-predominant SJS as a less likely differential since mucosal breakdown started prior to doxycycline. Additional tests included an extended respiratory panel, Mycoplasma and HIV serologies and HSV PCR, with positive results for Mycoplasma and HSV-1. It was thought HSV-1 positivity was likely a reactivation due to severe mucosal inflammation rather than the primary cause. On admission, the patient was started on valacyclovir for HSV-1, Azithromycin for Mycoplasma, and was given single dose of Etanercept 50 mg.

Various specialists were involved during his hospital course, with ENT recommending IV Decadron for airway edema and Ophthalmology prescribing multiple eye drops and Prokera amniotic membrane rings for corneal inflammation. Supportive care included oral dexamethasone solution, oral radiotherapy solution, oral nystatin solution, topical Vaseline for lips, and topical steroids for penile tip in addition to a nasogastric tube placement for artificial nutrition.

Almost one year later, the patient experienced a recurrence of RIME following a RSV infection, with mucosal involvement in the mouth, eyes, and penile tip. He was treated with a single dose of etanercept, along with oral prednisone at 40 mg for 3 days with symptom resolution and was empirically treated for HSV-1 due to indeterminate test results.

Discussion: This case discusses a young adult male with recurrent RIME triggered initially by Mycoplasma and later by RSV, both treated successfully with Etanercept. In RIME, oral mucositis is nearly universal, with possible ocular, urogenital, and cutaneous lesions, which resembles SJS or erythema multiforme. It is important to note that SJS's management involves identification of offending agent, while RIME is due to infectious cause. RIME's recurrence rate is estimated at 9% to 38%. Treatment focuses on supportive care and immunomodulators like corticosteroids and TNF inhibitors, though standardized protocols are lacking. The case aims to enhance clinical awareness of RIME in adults, emphasize early detection, and the need for a collaborative treatment approach.

18) ISOLATED LINGUAL MUCORMYCOSIS IN AN IMMUNOCOMPROMISED PATIENT: A RARE CASE PRESENTATION

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Introduction: Mucormycosis is a rare, opportunistic fungal infection with a high mortality rate in immunocompromised hosts. It commonly presents in a rhinocerebral form, which can manifest as oral manifestations, but isolated lingual mucormycosis is an extremely uncommon clinical entity.

Case Description: A 41-year-old male with a past medical history significant for multiple sclerosis and cutaneous T-cell lymphoma complicated by large cell differentiation, on Romidepsin, presented after a fall at home. Initial work-up revealed his fall was likely due to a seizure in the setting of antiepileptic noncompliance. During the patient's hospitalization, he continued to have tongue pain and swelling. Examination revealed poor dentition with several decaying teeth and thick tan plaques coating the dorsal and lateral surfaces of the tongue. A CT of the facial bones obtained after the seizure confirmed extensive inflammatory dental disease without periodontal abscess. ENT evaluated the patient and recommended oral hygiene with tongue scraping.

While there was improvement in the amount of thrush, there were two persistent light tan, well-demarcated plaques. The patient continued to report glossal pain and difficulty with mastication in addition to systemic fevers and chills. ENT biopsied the plaque located on the right anterior ventral tongue and histopathology identified fungal organisms with pauci septate, broad hyphal morphology, hyphal ribboning consistent with Mucorales. The patient was subsequently started on empiric dual coverage with amphotericin and posaconazole. Both nasal endoscopy and MRI of the brain, face, and neck were unremarkable for disease extension and bacterial and fungal blood cultures resulted negative.

Initial biopsies were obtained only for pathology and not culture. While histopathology concerning for invasive fungal infection is considered a proven diagnosis, there was concern about resistance patterns as some mold species demonstrate resistance to amphotericin or posaconazole. Thus, another biopsy from the right anterolateral tongue was obtained for pathology and culture and demonstrated a partially ulcerated benign squamous mucosa with an overlying neutrophil-rich fibrinopurulent material and no fungal organisms. Surgical debridement was not pursued as the patient's exam did not reveal other sites of nonviable tissue and there was evidence of clinical improvement on dual-antifungal therapy.

The patient completed approximately 18 days of amphotericin during his hospitalization, with a tentative plan of 3 months duration of posaconazole. During his hospital course, the patient required aggressive electrolyte repletion for hypokalemia and hypomagnesemia related to amphotericin.

Discussion: While the mechanism of the isolated tongue involvement is unclear, there is suspicion that traumatic injury, in the setting of an immunocompromised patient and with frequent use of dexamethasone mouthwashes, increased the risk of this opportunistic infection. The typical presentation of rhinocerebral mucormycosis includes chronic sinusitis, facial pain, headaches, with possible evidence of necrotic eschar. Mucormycosis isolated to the tongue is an exceedingly rare diagnosis with only a few cases published. Nevertheless, this case highlights the importance of a broad differential diagnosis and the need to maintain suspicion for invasive fungal infections in immunocompromised patients, even when lesions appear localized and benign.

19) MIND THE GAP: A STENT BETWEEN DINNER AND DISASTER: A CASE REPORT ON ESOPHAGEAL STENTING IN THE MANAGEMENT OF TRACHEOESOPHAGEAL FISTULAS

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Introduction: Tracheoesophageal fistula (TEF) is one of the complications seen in patients with esophageal cancer. The incidence of malignant tracheoesophageal fistula has been reported to be around 4.7% to 8.5% in large retrospective studies. Fistulas usually develop as a result of tumor invasion, which causes tissue necrosis and creates an abnormal passage between the trachea and the esophagus. Patients with TEFs typically present with recurrent pneumonia, aspiration, and chronic cough. The self-expanding metallic stent mainly serves as a palliative measure to seal the fistula, relieve symptoms like dysphagia, and improve quality of life.

Case description: A 70-year-old male presented with dysphagia initially to solids, which later progressed to include liquids and recurrent episodes of pneumonia unresponsive to prolonged antibiotic therapy. His symptoms gradually worsened over 6 months before he presented to the hospital. Chest CT showed irregular circumferential thickening of the mid-esophagus. Esophagogastroduodenoscopy (EGD) revealed a partially obstructive necrotic mid-esophageal mass and esophageal candidiasis. Biopsy confirmed malignant keratinizing squamous cell carcinoma. A follow-up EGD done 3 months later showed a TEF. The patient was then managed with a self-expanding esophageal stent to address both the obstructive tumor and the fistula. Post-procedure, the patient was able to drink water with no difficulty and was sent home to gradually advance his diet as tolerated.

Discussion: Esophageal stenting is a common treatment of choice for treating malignant TEFs. The American College of Gastroenterology recommends using covered self-expanding metallic stents as the preferred treatment. Studies indicate that initial fistula closure rates range from 70% to 100%, leading to improvements in dysphagia and TEF-related complications such as recurrent pneumonia. In cases with large fistulas and airway compromise, dual esophageal and tracheal stenting has shown benefits. Complications associated with esophageal stents include stent migration, bleeding, airway obstruction, worsening of the fistula, and fistula recurrence.

20) A TRIED-AND-TRUE TRIAD?A CASE SERIES OF ATYPICAL CHOLANGITIS

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Introduction: Acute cholangitis is a serious infection of the biliary tree with dire implications if not recognized early including up to 50% mortality. The classic triad of fever, right upper quadrant (RUQ) pain, and jaundice developed by Jean-Martin Charcot is often relied on to identify these patients. Acute cholangitis however can be missed or misdiagnosed when relying solely on these criteria.

Methods: Following IRB approval, we reviewed the cases of 5 patients (3 F and 2 M) presenting between 02/2024 and 12/2024. Our inclusion criteria consisted of patients diagnosed with acute cholangitis via ERCP who exhibited purulent biliary discharge and biliary duct obstruction, but did not present with the classic triad. Our exclusion criteria included patients with Charcot's triad who had cholangitis on ERCP.

Results: The patients presented with varying combinations of fever, right upper quadrant (RUQ) pain, and jaundice, all ultimately diagnosed with bile duct stones and signs of infection. Patient 1, a 70-year-old female, had fever without RUQ pain or jaundice and was found to have a retained stone and pus, treated with ERCP, sphincterotomy, stone removal, and IV antibiotics. Patient 2, a 56-year-old male with RUQ pain but no fever or jaundice, had a CBD stone with purulent material and was managed with antibiotics, sphincterotomy, stone removal, stent placement, and later cholecystectomy. Patient 3, a 31-year-old female, presented similarly to Patient 2 and received IV antibiotics, sphincterotomy, stone extraction, and a stent. Patient 4, a 66-year-old male with fever and jaundice but no RUQ pain, had pus and multiple CBD stones and was treated similarly. Patient 5, a 33-year-old female with RUQ pain, was also found to have numerous CBD stones and pus and was managed with antibiotics, sphincterotomy, stone removal, and stenting.

Conclusion: Patients with acute cholangitis can present with a variety of symptoms that do not consistently fulfill Charcot's triad. Care should be taken to apply these criteria as appropriate but to also consider expanding the classic definition of cholangitis.

21) REMEMBER: NOT ALL HEART FAILURE IS FROM THE HEART – A DIAGNOSTIC LESSON

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Hypertension is a significant contributor to heart failure with preserved ejection fraction (HFpEF) and can be particularly challenging when complicated by bilateral renal artery stenosis (RAS). In such cases, symptoms like flash pulmonary edema and acute hypoxic respiratory failure(AHRF) may recur despite optimal heart failure management, as the underlying issue is renovascular. Timely diagnosis and revascularization can improve both cardiac and renal function. We present a case of an elderly male with resistant hypertension and HFpEF who had recurrent hospital admissions with decompensations despite aggressive treatment, due to delayed diagnosis of bilateral RAS later successfully managed with renal artery stenting.

An 83-year-old male with complex medical history including resistant hypertension, HFpEF, severe mitral regurgitation status post MitraClip, and chronic kidney disease (CKD) stage III, was admitted with new-onset atrial fibrillation with rapid ventricular response, AHRF, and generalized weakness. This was his third admission in 45 days for decompensated heart failure. At home, he was on four antihypertensive agents, including two diuretics. On admission, he was normotensive and was started on diltiazem for rate control. His hospital course was complicated by acute kidney injury (AKI) on CKD, prompting nephrology consultation. Chart review revealed a recent outside-hospital nephrology evaluation for worsening CKD, when bilateral RAS was diagnosed. A referral to vascular surgery had been made, but no further follow-up occurred, and the patient continued to be hospitalized with recurrent volume overload and flash pulmonary edema. He was diagnosed with oligoanuric AKI on CKD III, with the acute worsening attributed to multifactorial pre-renal azotemia in the setting of progressive RAS and hypoperfusion. Computed tomographic angiogram(CTA) of the renal arteries demonstrated worsening critical bilateral stenosis, 98% of the right renal artery and 80% of the left. Interventional radiology (IR) performed successful bilateral renal artery angiography with stent placement.

This case highlights an often-overlooked etiology of heart failure with preserved ejection fraction (HFpEF): bilateral renal artery stenosis (RAS) leading to recurrent flash pulmonary edema and worsening renal function, a constellation known as Pickering Syndrome. First described in 1988, this syndrome underscores the critical relationship between the renal and cardiovascular systems, especially in patients with resistant hypertension.

Our patient presented with oligoanuric AKI on CKD III and recurrent HFpEF exacerbations despite optimal medical therapy. His diagnosis of critical bilateral RAS as the cause for his decompensated HF and AHRF was delayed, reflecting a broader trend of underrecognition. Studies have shown that bilateral RAS, especially in the elderly with comorbidities, may be mistakenly attributed to progressive heart failure or age-related decline. As in our case, patients may undergo multiple hospitalizations and escalating diuretic therapy before a vascular etiology is considered.

In patients with recurrent HFpEF exacerbations, resistant hypertension, and worsening renal function, clinicians should maintain a high index of suspicion for bilateral renal artery stenosis. Timely recognition and intervention can dramatically improve outcomes by reversing heart failure symptoms, preserving renal function, and reducing hospital admissions. Our case reinforces the importance of considering renovascular causes in the differential diagnosis of refractory heart failure and AKI.

22) HUMAN GRANULOCYTIC ANAPLASMOSIS PRESENTING AS A STEMI IMITATOR

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Human Granulocytic Anaplasmosis (HGA) is a tick-borne disease caused by the pathogen Anaplasma phagocytophilum. It's primary vector is the Ixodes tick with I. scapularis in the Northeast and Midwest United States. While HGA commonly presents with non-specific symptoms resembling a viral infection, approximately 0.3% of patients die. Here we report a rare case of HGA associated cardiomyopathy leading to cardiogenic shock and death.

An 89 year old female with past medical history remarkable for HTN and treated breast cancer was brought to her local emergency department (ED) for altered mentation with no other coinciding symptoms, and was discharged with a tentative diagnosis of dehydration after unremarkable workup including CT of her brain. The following day, she was found on the ground conscious but still confused and again taken to her local ED and unable to provide additional history. Workup showed a transaminitis with AST and ALT to 347 and 73 respectively, a normal white count of 4.3 however with a bandemia of >40% and platelet count of 7, lactate of 3.0, BNP of 681, and troponin of 10.48, and subsequently transferred to our tertiary care center. She became tachycardic to the 180s briefly on arrival with unclear underlying rhythm, and an EKG revealed ST elevations in an LAD pattern suspicious for ST-elevation myocardial infarction (STEMI) so she was emergently taken to the cath lab. She was promptly started on broad spectrum antibiotics including doxycycline, but IV heparin was deferred due to severe thrombocytopenia. Cardiac catheterization showed moderate 2-vessel disease but no significant intervenable coronary vessel occlusion. Upon arrival back from the cath lab, she continued to decline, now unable to follow commands and with notably cool extremities. Telemetry now showed atrial fibrillation with rapid ventricular rates to 180s and declining pressures alongside desaturation on maximum non-rebreather mask, so she was emergently intubated with IV metoprolol provided for rate control. A TTE demonstrated a left ventricular ejection fraction of 10% and multiple wall motion abnormalities suggestive of stress-induced cardiomyopathy. Additional labs returned consistent with disseminated intravascular coagulation (DIC) and PCR was positive for Anaplasma. She was started on norepinephrine, amiodarone, dobutamine, and sodium bicarbonate infusions. Despite this, her vasopressor requirements continued to increase and next of kin decided to initiate comfort care measures. She subsequently passed.

This case illustrates a rarely reported complication of HGA, Takotsubo cardiomyopathy, which can easily be confused with myocardial infarction if clinical context is not taken into consideration. In our case, this led to profound cardiogenic and septic shock demonstrating the need for prompt recognition and treatment of HGA as early as possible with doxycycline to prevent life-threatening complications. While a STEMI should not be missed, clinicians should remain vigilant of systemic syndromes than can mimic acute coronary syndrome (ACS).

23) THIS LYMPHOMA DOESN'T PLAY FAIR: HYPERCALCEMIA AND HEAVY LUNGS IN T-CELL/HISTIOCYTE-RICH LARGE B-CELL LYMPHOMA

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Introduction: T-cell/histiocyte-rich large B-cell lymphoma (TCHRLBCL) is a rare variant of diffuse large B-cell lymphoma (DLBCL) which comprises <10% of cases. TCHRLBCL is characterized by a low content of malignant B-cells in an extensive background of reactive T-cells and histiocytes. We present a unique case of TCHRLBCL presenting with diffuse lymphadenopathy (LAD), pleural lesions and effusion, and hypercalcemia.

Case: A 61-year-old female presented with dyspnea, epigastric discomfort, nausea, fatigue, and mild confusion. She endorsed a 5-week history of bilateral neck pain and lumps. On presentation, she was afebrile with normal vitals. Exam was notable for diffuse, tender bilateral cervical and posterior auricular LAD, diminished basilar lung sounds, and epigastric tenderness. Labs were notable for hypercalcemia (serum calcium 14 mg/dl, ionized calcium 7.97 mg/dl), hyperuricemia (uric acid 11.5 mg/dl), mild hypokalemia (potassium 3.4 mmol/L), acute kidney injury (creatinine 1.56 mg/dl, baseline 0.6 mg/dl), and elevated LDH (513 U/L). CT neck showed diffuse cervical lymphadenopathy with few centrally necrotic lymph nodes, favored to represent lymphoma. CT angiogram chest showed diffuse, bulky lymphadenopathy with lung nodules, soft tissue lesions, and pleural lesions concerning for malignancy. CT abdomen/pelvis showed wedge-shaped areas of hypoenhancement in bilateral kidneys and extensive bulky pelvic lymphadenopathy with some necrosis.

Hypercalcemia was managed with IV fluids, zoledronic acid, and calcitonin with improvement in fatigue and mental status. Thoracentesis was performed and revealed an exudative right pleural effusion, likely secondary to malignancy. Her dyspnea and abdominal fullness significantly improved after thoracentesis. She underwent cervical lymph node biopsy with general surgery. Surgical pathology demonstrated TCHRLBCL likely arising from a nodular lymphocyte predominant B-cell lymphoma (NLPHL). Peripheral flow cytometry revealed increased CD4-positive T-cells, favored to be reactive in nature.

The patient was visiting from out of state, which posed a barrier to cancer treatment in Wisconsin. After discharge, she was followed outpatient by UW hematology and medically stabilized with IV fluids for rising calcium. She safely drove to her home state where she is anticipated to receive therapy with rituximab, cyclophosphamide, doxorubicin, vincristine and prednisone (R-CHOP) for her TCHRLBCL.

Discussion: TCHRLBCL is a rare and aggressive lymphoma subtype that is often diagnosed at later stages (III/IV). Given overlapping features with T cell lymphoma and NLPHL, it has been classically difficult to diagnose. Incidence is higher among men than women, and among Black patients compared to white patients. 5-year overall survival varies (46-75%). The most common extranodal sites include bone marrow, spleen, and liver. Outcomes were historically worse for TCHRLBCL than DLBCL but have improved in the era of rituximab therapy. New studies have shown an improvement in treatment response with higher intensity sequential therapy, such as R-CHOP/R-ICE, though data are limited. The unique tumor microenvironment of TCHRLBCL makes CAR-T therapy difficult. Prompt diagnosis and treatment, close monitoring, and multidisciplinary care are imperative to improve survival.

24) THYROID STORM'S SILENT COUSIN: SEVERE HYPOTHYROIDISM PRESENTING AS CARDIOGENIC SHOCK

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Introduction: Profound hypothyroidism can lead to severe cardiovascular complications, including acute reduced ejection fraction (HFrEF) and pericardial effusion. Despite the absence of true myxedema coma, an extreme manifestation of hypothyroidism, has been linked to cardiovascular collapse and multi-organ failure (1). This case underscores the critical impact of severe hypothyroidism on cardiac function and highlights the rapid improvement in ejection fraction (EF) following acute intravenous thyroid hormone repletion.

Case Presentation: A 31-year-old female with a history of hypertension, congenital hypothyroidism, and asthma presented with severe, 10/10 chest pain and dyspnea at a local hospital. Initial evaluation revealed cardiomegaly and pulmonary edema on chest X-ray, with bedside point-of-care ultrasound (POCUS) demonstrating a large pericardial effusion, severely reduced EF (15%), and B-lines. Confirmatory transthoracic echocardiogram (TTE) revealed a moderate pericardial effusion with moderate tamponade physiology and severe diffuse hypokinesis of the left ventricle.

Laboratory findings were notable for a TSH of 160.66 μIU/mL and undetectably low free T4, indicative of profound hypothyroidism. The patient underwent emergent pericardiocentesis with pericardial drain placement, and treatment with high dose intravenous levothyroxine for two days.

Following intravenous thyroid hormone repletion, the patient's EF showed a modest improvement within days, highlighting the reversible nature of hypothyroidism-induced cardiac dysfunction. The patient's clinical course included stabilization of blood pressure and resolution of hypertensive urgency.

Discussion: This case illustrates the profound impact of severe hypothyroidism on cardiac function, manifesting as pericardial effusion with tamponade physiology and HFrEF. The rapid improvement in EF following thyroid hormone repletion underscores the critical role of thyroid hormones in myocardial function and highlights the importance of early recognition and treatment of severe hypothyroidism in patients presenting with cardiac symptoms.

Conclusion: This case emphasizes the need for heightened clinical awareness of the cardiovascular manifestations of severe hypothyroidism. Prompt diagnosis and treatment with intravenous thyroid hormone can lead to significant and rapid improvement in cardiac function, as evidenced by the increase in EF in this young, previously healthy patient.

25) STANDARDIZED CURRICULUM IN CARDIAC CRITICAL CARE: A PILOT SIMULATION TO IMPROVE CONFIDENCE IN CENTRAL AND ARTERIAL LINE PLACEMENT

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Introduction: Internal Medicine (IM) residents require proficiency in invasive procedures like central venous catheter (CVC) and arterial line placement. Point-of-care ultrasound (POCUS)-guided line insertion has become a crucial skill in critical care settings and improves outcomes for patients. Many IM learners report low confidence in performing these procedures. Studies show that simulation-based training can significantly improve procedural performance and reduce complications such as catheter-related bloodstream infections. This pilot program evaluates the effectiveness of a simulation-based POCUS training in improving senior resident confidence in central and arterial line placement.

Methods: An email was sent to IM residents at the University of Wisconsin asking for voluntary participation in a pilot POCUS-guided line training session. Training included a didactic presentation followed by hands-on practice with manikins in the simulation center. Participants completed pre- and post- surveys assessing their baseline experience, confidence, and troubleshooting complications with CVC and arterial line placement.

Statistical Analysis: Pre- and post-survey results were compared using paired t-tests to determine if there were statistically significant improvements in confidence across key domains: central line insertion, arterial line insertion, troubleshooting complications, and using POCUS for guidance. Descriptive statistics were used to summarize the survey results, with means and standard deviations reported for each variable.

Results: Of 11 emails sent, 8 residents completed both the pre- and post-surveys. A student t-test was used to assess confidence pre and post simulation. On a scale of 1-5 (1 being least and 5 being most confident). Post-survey results showed an improvement in average confidence in central line and arterial insertion from 1.5 to 3.5 ($p < 0.01$) and 1.75 to 3.75 ($p < 0.01$) respectively. There was also an improvement in average confidence in troubleshooting central and arterial lines from 1.75 to 3.2 ($p < 0.05$) and from 2.75 to 3.0 ($p < 0.05$) respectively.

Discussion: This pilot demonstrates simulation-based curriculum can significantly improve the confidence of IM residents in performing POCUS-guided line placements. Future iterations of this program should consider integrating more advanced procedures, such as transvenous pacemaker placement and Swan-Ganz catheterization, especially for fellow-level trainees.

Conclusion: This pilot study highlights the potential for simulation-based training to strengthen procedural skills among IM trainees. The results indicate that focused simulation sessions, improves confidence and competence for residents and can likely be applied to early fellows. Continued efforts to expand this training are warranted to ensure that learners are fully prepared to perform these critical procedures confidently to continue to advance their careers and provide better, safer care for patients.

26) A TOUGH PILL TO SWALLOW: DEGLUTINATION-INDUCED LIFE THREATENING BRADYARRHYTHMIA

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Introduction: Deglutination syncope is a rare condition that can lead to significant limitations and life threatening arrythmias.

Case Presentation: A 64-year-old woman with hypertension developed a sore throat and was diagnosed with acute pharyngitis (negative group A streptococcus antigen testing). Her symptoms worsened over a few days, now with episodic neck pain followed by 10-30 seconds of lightheadedness, prompting evaluation in the emergency department (ED).

In the ED, vitals, telemetry, complete blood count, and comprehensive metabolic panel were normal. A CT neck with contrast did not reveal any abnormalities. She subsequently developed 10-20 second episodes of throat pain followed by lightheadedness. These episodes were inducible by taking sips of water. Telemetry review during these episodes revealed high degree AV block and sinus pauses.

She was admitted to cardiology, and a transvenous pacemaker (TVP) was placed for increasingly frequent episodes of AV block and sinus pauses/arrest (longest arrest was 10 seconds). Lyme titers, troponin levels, and thyroid function were negative. Noting her arrhythmia occurred with episodes of throat pain, there was concern that she was experiencing vagally mediated sinus and AV node dysfunction incited by acute pharyngitis. Thus, acute pharyngitis was treated with Augmentin and steroids. Otolaryngology was consulted; laryngoscopy was significant for pharyngeal inflammation. Her pain gradually resolved and her TVP settings were decreased and removed as patient had no arrythmia for >24 hours. Electrophysiology recommended an outpatient 30-day event monitor and follow up.

The event monitor after discharge revealed re-emergence of underlying 1st degree AV block with episodes of high degree AV block correlated with syncope. Thus, she underwent dual chamber permanent pacemaker placement.

Discussion: In this case, we describe a rare instance of deglutination syncope, a neurally mediated reflexive syncope. One review reported that there have been 80 reported cases in English-language literature between 1793-2011. Swallow syncope occurs when swallowing induces excessive vagal stimulation via afferent pathways from the pharyngeal, laryngeal, and esophageal nerve plexuses to the efferent pathways in the cardiac conduction system. This inhibits the sympathetic tone leading to bradyarrhythmia and syncope. Around 39% of deglutination syncope cases are associated with underlying gastrointestinal disease; and 15% with cardiac disease. Around a third of patients had metabolic diseases including hypertension, diabetes, dyslipidemia, or obesity. Trigger types may be general or specific (different types or temperatures of food and liquid).

Treatment is limited, but it involves treating underlying conditions and a pacemaker if syncope is unresolved. Due to the rare nature of this condition, no randomized control trial has been conducted to evaluate treatment options.

Our patient differs from previously described cases as she had pharyngeal disease rather than gastrointestinal. This is consistent with known anatomy, as neural plexuses are present not only within the esophagus but also within the pharynx.

Swallow syncope may be life threatening. It is important to complete thorough evaluation of history, triggers, precipitating pathology, and EKG. Treatment has been aimed at addressing underlying pathology and patient education. In cases where this is not effective, pacemakers have been used.

27) WHITE COAT HYPERTENSION AND HYPOKALEMIA? IS IT REALLY JUST THE WHITE COAT?

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Introduction: White coat hypertension, defined as a blood pressure below the threshold for hypertension out-of-office but above the threshold for hypertension in-office, effects approximately 10% of individuals. Consistently elevated in-office blood pressure readings should raise suspicion for primary hypertension, but clinicians should also consider secondary causes of hypertension in patients who are younger or have other lab abnormalities.

Case Description: A 39-year-old male with history of white coat hypertension, hypokalemia, migraines, anxiety, and depression presented to the clinic for annual physical exam. The patient was having vision difficulties, and specifically a hard time focusing on screens and paper. His headaches were well controlled at the time of visit. His in-clinic blood pressure was 155/94 with patient-reported home blood pressure readings of 130 systolic.

Following the clinic visit, lab work was notable for potassium of 3.0, prompting a work-up for hyperaldosteronism that included an aldosterone level of 31.1, renin 0.7, and aldosterone/renin ratio of 44.4. The remainder of the comprehensive metabolic panel and complete blood count was normal. Further work up included a CT abdomen without IV contrast which showed a 1.5 cm benign left adrenal myelolipoma containing gross fat, but no solid adrenal nodules were present. Imaging was followed by bilateral adrenal vein sampling which was equivocal with right and left cortisol corrected aldosterone lateralization indices of 3.69 and 0.27, respectively.

The patient was started on spironolactone with normalization of his blood pressure to a systolic of 120 and normalization of his potassium without supplementation. Endocrine surgery was consulted, and they concluded he was not a candidate for adrenalectomy given there is no clear target for surgical removal, and he had significant improvement with medical management alone. Additionally, his venous sample was considering equivocal due to one index falling between the 3-4 range. Most patients with unilateral disease will have ratios >4 and most patients with bilateral disease will have ratios <3. Ratios between 3 and 4 representing a zone of overlap.

Discussion: Primary hyperaldosteronism is an often-underdiagnosed cause of secondary hypertension. It is usually classified as bilateral or unilateral, with treatment decisions often being based off this classification. This patient is unique in that his work up was equivocal for whether he has bilateral or unilateral disease. Therefore, the decision of medical versus surgical management is less clear. For patients with definite unilateral hyperaldosteronism, surgical intervention can be curative and is seen as more cost effective over time and leads to better quality of life. For patients with bilateral hyperaldosteronism, medical management is preferred given that blood pressure control is usually inadequate with unilateral adrenalectomy and the risks of bilateral adrenalectomy, such as complete adrenal insufficiency and need for long term glucocorticoid/mineralocorticoid replacement, outweigh the benefits. Therefore, for this patient, medical management was the best treatment options to limit surgical risks and optimize patient safety.

28) BEYOND STEROIDS: COMBINATION THERAPY IN WARM AUTOIMMUNE HEMOLYTIC ANEMIA

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Warm autoimmune hemolytic anemia (WAHA) is caused by warm agglutinins (typically IgG) binding to red cell antigens at body temperature. About half of cases are idiopathic, while others are secondary to disorders like lymphoproliferative disorders. Given the likelihood of an associated condition, several diagnoses should not be missed; thus, a thorough workup is necessary.

A 63-year-old male presented by EMS for one month of progressive fatigue, weakness, exercise intolerance and darker-than-normal urine, despite adequate hydration. On exam, he had mild scleral icterus and slight jaundice, but otherwise normal exam. Initial labs revealed a normocytic anemia (hemoglobin 9.7 g/dL, down from his baseline of 15.5 g/dL), elevated absolute reticulocyte count (260.8 K/μL, 11.59%), and elevated indirect bilirubin (total bilirubin 5.0 mg/dL). Scrutiny of his medication list did not reveal medications that are known to cause WAHA. The Direct Antiglobulin Test was positive for IgG. A peripheral smear showed occasional Howell-Jolly bodies, RBC basophilic stippling, and frequent nucleated RBCs.

Tick serologies, HIV, Syphilis, Hepatitis B and C, QuantiFERON Gold, parasitology and blood cultures studies were negative. Due to the presence of basophilic stippling, heavy metal toxicities and vitamin deficiencies were screened (lead, arsenic, zinc, copper, folate, B12, and methylmalonic acid), all of which were within normal limits. No evidence of valvular disease or aortic stenosis was present thus ruling out common causes of mechanical hemolysis.

Bone marrow biopsy demonstrated hypercellular marrow with erythroid-predominant trilineage hematopoiesis and <1% blasts. Cytogenetics revealed a del(20q) abnormality in 17 cells, suggesting a clonal myeloid process, which raised concern for myelodysplastic syndrome (MDS). However, there was insufficient morphologic dysplasia to meet full diagnostic criteria for MDS. He received four days of dexamethasone 40 mg, but without adequate clinical response. He subsequently started on rituximab 375 mg/m2 weekly and a prednisone taper. After approximately one week of treatment, he began to respond, and his hemoglobin gradually normalized.

Warm autoimmune hemolytic anemia is a chronic, relapsing disease with a broad range of underlying causes, including medications, viral infections, clonal lymphoproliferative diseases, and autoimmune conditions. This instructive case emphasizes the need for a comprehensive diagnostic evaluation in WAHA. Additionally, it highlights the benefits of combining rituximab with glucocorticoids compared to glucocorticoids alone. Studies have shown that this combination leads to higher rates of relapse-free survival at 36 months of follow-up.

29) DEVELOPMENT OF A ROLE-REVERSAL AND STANDARDIZED PATIENT SIMULATION TO TEACH RESIDENTS EFFECTIVE COMMUNICATION PRACTICES FOR PATIENTS WITH LIMITED ENGLISH PROFICIENCY

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The growing population with limited English proficiency (LEP) in the United States faces significant healthcare disparities, including longer hospital stays and an increased risk of adverse events due to communication breakdowns. While ad-hoc interpreters, such as family members, are sometimes used, professional medical interpreters have been shown to reduce error rates, decrease readmission rates, improve healthcare utilization, and enhance patient outcomes. Integrating professional interpreters also fosters cultural understanding, thereby improving physician-patient communication.

The current University of Wisconsin internal medicine residency curriculum lacks explicit content on medical interpreter utilization and communication with LEP patients. However, the ACGME internal medicine milestones emphasize adapting practice for diverse populations and mitigating communication barriers, directly aligning with this need. A recent needs assessment revealed a significant interest among UW residents to improve their communication skills with LEP patients and interpreters.

To address this gap, we developed an educational session in collaboration with UW Health Interpreter Services, to be conducted at the UW Simulation Center. This session will be integrated into the 2025-2026 academic year curriculum for all internal medicine interns. Interns were selected as the target learner population due to the potential for greater impact on patient care through early training. Spanish was chosen as the primary non-English language for the simulation, reflecting its prevalence in the U.S. and among the UW patient population. The session comprises three key activities:

1. Role-Reversal Simulation: Interns will experience a medical encounter as a patient in a non-English-speaking environment, highlighting communication challenges.
2. Lecture: A didactic session covering the importance of using medical interpreters and effective communication strategies.
3. Clinical Scenarios with Standardized Patients: Practical application of learned skills in simulated clinical scenarios with Spanish-speaking standardized patients, utilizing various interpreter modalities (in-person, video, or telephone).

This project's uniqueness lies in its innovative combination of role-reversal simulation with standardized patient encounters to teach best practices in LEP patient communication. Previous studies have demonstrated the efficacy of both standardized patient encounters in teaching communication skills with interpreters and role-reversal exercises in fostering communication competency and cultural awareness. By integrating these proven methodologies, our goal is to comprehensively equip residents with the necessary skills to effectively and compassionately care for LEP patients.

To assess the effectiveness of the session, interns will complete pre- and post-session questionnaires. The results from these surveys will be thoroughly analyzed and discussed to evaluate the impact of the educational intervention on residents' knowledge, attitudes, and perceived communication skills with LEP patients. Upon analyzing our post-session questionnaire, our pilot workshop demonstrated improvement in understanding the impact of language barriers, the vulnerability of LEP patients, physician responsibility and proficiency in interpreter-mediated communication, and confidence in utilizing professional medical interpreters for comprehensive care.

30) NOROVIRUS COMPLICATING CHRONIC CONDITIONS: A CASE OF CO-OCCURRING THYROTOXICOSIS AND EUGLYCEMIC DIABETIC KETOACIDOSIS

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Introduction: Over the last 3 years, there have been few reported cases of euglycemic diabetic ketoacidosis (euDKA) in patients with thyrotoxicosis or thyroid storm who are also treated chronically with SGLT2i medications. Both thyrotoxicosis and euDKA are emergent conditions that require specific intervention and may present with overlapping symptoms. While thyrotoxicosis is a rare condition, it can potentiate insulin resistance. This, in addition to the increasing use and indications for chronic SGLT2i therapy may make thyrotoxicosis with euDKA a more common and severe emergent presentation for patients with hyperthyroidism.

Case Description: A 53-year-old male with atrial fibrillation on apixaban and digoxin, non-ischemic heart failure with reduced ejection fraction, and Grave's disease on propylthiouracil presented to the emergency department after multiple days of abdominal pain and vomiting. He reported 4 days of diarrhea and 3 days of vomiting, which made him unable to take his home medications for 36 hours prior to presentation. He had been taking his home medications before the most recent 36 hours, including his empagliflozin, despite having nearly no PO intake for 4 days. In the emergency department he had atrial tachycardia with rates >200 bpm. He was given 3L of IV fluids which improved his heart rate to around 160 bpm. His labs were notable for: lactate 4.0, Na 134, K 3.1, CO2 14, anion gap 29, glucose 194, VBG with pH 7.35 and pCO2 27, WBC 23.8, Hgb 22.1, and normal platelets and renal function. Due to his history, persistent tachycardia, and recently missed medications, thyroid labs were checked and notable for a TSH <0.01 with T4 elevated at 2.23. Endocrinology was consulted, he was treated for thyrotoxicosis with propranolol, hydrocortisone, and propylthiouracil, and he was admitted to the hospital for thyrotoxicosis. While glucose was elevated, neither this elevation, nor the elevated lactate fully explained the severity of the anion gap elevation, so B-OH was added on and found to be elevated at 9.36, consistent with euDKA. While his VBG pH was normal, pCO2 was low at 27 consistent with respiratory compensation. His potassium was supplemented, and when >3.5 he was started on an insulin drip. With treatment of both conditions, symptoms improved but abdominal pain and diarrhea did not resolve. Further testing was positive for norovirus and supportive cares were continued until symptoms improved sufficiently that he was able to discharge home.

Discussion: Euglycemic DKA is a known complication of fasting while taking SGLT2i medications, and the increasing frequency and indications for use of these medications may raise the frequency of euDKA. Thyrotoxicosis/hyperthyroidism can contribute to increased insulin resistance as well and may contribute to the development and severity of euDKA in patients with hyperthyroidism being treated with SGLT2i when they are unable to sustain PO intake. While thyrotoxicosis and the hemodynamic changes caused by it require urgent intervention, euDKA should also be considered and evaluated for in patients with these co-occurring conditions who present with poor PO intake or inability to tolerate medications both in the ED/hospital and outpatient settings when providing advice/treatment.

31) SUPERIOR VENA CAVA SYNDROME SECONDARY TO TUNNELED DIALYSIS CATHETER IN A PATIENT WITH END-STAGE RENAL DISEASE

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Background: Superior vena cava (SVC) syndrome is characterized by obstruction of blood flow through the SVC, leading to venous congestion of the head, neck, and upper extremities. While malignancy remains the most common etiology, central venous catheters, particularly in hemodialysis patients, represent an important and underrecognized non-malignant cause.

Case Presentation: We present the case of an 84-year-old female with end-stage renal disease (ESRD) on hemodialysis via a right internal jugular tunneled dialysis catheter (TDC) who developed SVC syndrome. She presented with dizziness and syncope shortly after catheter exchange. Initial workup, including chest X-ray and ECG, was unremarkable, with stable labs relative to baseline. However, over the course of hospitalization, she developed progressive neck and facial swelling, dysphagia, and hoarseness. Contrast-enhanced CT of the chest revealed a thrombus along the TDC trajectory within the SVC, extending into the azygos vein, with prominent venous collaterals. The patient was started on systemic anticoagulation and underwent catheter exchange from the right IJ to a femoral site. She was transitioned to apixaban for outpatient anticoagulation, with plans for follow-up with interventional radiology for potential SVC stenting.

Discussion: Thrombotic SVC syndrome represents a rare but serious complication of long-term central venous access in hemodialysis patients. Risk factors include ESRD-related hypercoagulability, endothelial injury from catheter insertion, and turbulent flow leading to fibrin sheath formation. Virchow's triad aptly describes the pathophysiologic milieu. Early recognition is critical, as symptoms can progress to life-threatening airway compromise. Management typically involves systemic anticoagulation, catheter removal or exchange, and consideration of advanced interventions such as catheter-directed thrombolysis or endovascular stenting.

Conclusion: This case underscores the importance of vigilance for SVC thrombosis in ESRD patients with chronic central venous access. Prompt diagnosis and multidisciplinary management are essential to prevent morbidity and optimize outcomes.

32) AN UNUSUAL CASE OF INTIMO-MEDIAL DEGENERATION PRESENTING AS MULTI-FOCAL PNEUMONIA UNRESPONSIVE TO ANTIBIOTICS

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Introduction: Intimo-medial mucoid degeneration (IMMD) is a rare vascular pathology characterized by a myxoid degenerative process affecting the vascular wall. It most commonly presents as aneurysmal degeneration and is primarily reported in African females with hypertension. Due to its rarity, the true prevalence of IMMD remains uncertain.

Case Presentation: A young Caucasian male with a history of chronic tobacco use and attention-deficit/hyperactivity disorder (ADHD) presented from an outside hospital with worsening dyspnea and multifocal pneumonia presumed to be unresponsive to antibiotics. Further evaluation revealed an ascending aortic aneurysm. The patient subsequently developed an aortic dissection and underwent successful surgical repair. Intraoperative findings included severe aortic regurgitation, suggesting the initial symptoms may have stemmed from acute heart failure rather than infectious pneumonia. Histopathological analysis of the aortic tissue demonstrated features diagnostic of IMMD.

Discussion: IMMD is a seldom-reported entity, often diagnosed post-mortem or through surgical pathology, as in this case. Although most documented cases involve African females with hypertension, our patient had no such demographic risk factors, indicating the need to consider IMMD in broader clinical contexts. Diagnostic evaluation should be guided by clinical presentation and supported by imaging modalities such as echocardiography, CT, and CTA. Laboratory findings, including cardiac biomarkers, may assist in the broader workup, but histopathological examination remains essential for diagnosis.

Conclusion: This case highlights an atypical presentation of IMMD in a young Caucasian male, emphasizing the importance of considering rare vascular pathologies in the differential diagnosis of acute aortic syndromes. Early recognition and surgical intervention are critical, and definitive diagnosis relies on tissue analysis.

33) CASE OF PITUITARY APOPLEXY DUE TO NEUROENDOCRINE PITUITARY ADENOMA

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Introduction: Pituitary apoplexy is a rare and potentially life-threatening condition caused by hemorrhage/infarction of the pituitary gland often in patients with pituitary macroadenoma. Patients will often present with acute headaches, vision changes, and loss of consciousness. It requires prompt recognition, and urgent surgical intervention is indicated. Corticotropic deficiency is the most life-threatening consequence due to hemodynamic instability and requires prompt high-dose glucocorticoids. Pituitary apoplexy often involves the anterior pituitary with development of corticotropic, thyrotropic, and gonadotropic hormonal deficiencies leading to panhypopituitarism in the long term. Antidiuretic hormone (ADH) deficiency is rare.

Case: 29 years old male without any significant past medical history presented to the ED via EMS after being found down at home by his mother. Prior to admission, the patient had been complaining of headaches and vision changes. He had missed an appointment with optometry. Head CT showed a large hemorrhagic suprasellar mass extending along the sphenoid bone involving the cavernous sinus and optic chiasm and associated obstructive hydrocephalus. EVD was placed by neurosurgery and transferred to ICU for further care. Patients underwent endoscopic endonasal transsphenoidal pituitary resection and decompression the following day. Post-op MRI revealed a residual tumor with hemorrhage, and the patient was taken back to the operating room for repeat resection. Final histopathology revealed lactotroph pituitary neuroendocrine. (PitNET) pituitary adenoma. Patient was started on stress dose hydrocortisone for suspected adrenal insufficiency. Cabergoline was added later in the course. The hospital course was complicated by increased urine output and hypernatremia due to arginine vasopressin deficiency (central diabetes insipidus) requiring desmopressin. Patent's TSH levels were within normal limits initially. EVD was ultimately removed after 14 days. The patient had mild unsteadiness and impaired balance for which he was transitioned to inpatient rehab and later discharged home. Patients continued to follow endocrinology for medical management of hypopituitarism. Prolactin levels have progressively decreased. In the clinic, he started on levothyroxine and testosterone. He is currently on 20 mg daily hydrocortisone for adrenal insufficiency. He continues to have excessive thirst and is currently 0.1 mg twice daily desmopressin for diabetes insipidus.

Discussion: Pituitary apoplexy can be a life-threatening emergency requiring prompt recognition and urgent surgical and medical management. Timely management of potential adrenal crisis is of utmost importance. Surgical management is needed to prevent permanent visual loss due to pressure on optic chiasm. This case also highlights the importance of long-term follow-up of patients with pituitary apoplexy due to the risk of persistent hormone deficiencies and the risk of tumor regrowth.

34) FROM SKIN TO SPINE: THE MANY FACES OF EXTRAPULMONARY TUBERCULOSIS

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Extrapulmonary tuberculosis (TB) represents a diagnostic challenge due to its varied clinical presentation. In absence of classic pulmonary symptoms, it is important to consider rare manifestations of TB when determining a unifying diagnosis.

Our patient is a 28-year-old, Spanish-speaking male immigrant from Mexico with unknown past medical history. He presented for back pain and leg weakness progressing to paraplegia over one month, along with weight loss, fatigue, and decreased appetite. Exam was notable for paraplegia, inducible clonus, and an asymptomatic, verrucous plaque on his left knee. Total spine magnetic resonance imaging (MRI) revealed a 1.0 x 2.8 cm intramedullary lesion with cord expansion at the T11 level; MRI brain revealed a 2 mm focus in the left anterior putamen of the brain. Neurosurgery excised the intramedullary mass to prevent progression of neurologic deficits. Histologic examination of the spinal lesion revealed necrotizing granulomatous inflammation. Tangential skin biopsy of the knee lesion showed superficial granulomatous inflammation; no microorganisms were seen on acid-fast bacterial (AFB) stains for either lesion. Suspicion for TB remained high and CT chest revealed reticulonodular foci in the upper lobes and multiple nodular lesions throughout the right lung concerning for TB. Lesional skin tissue was subsequently cultured and grew a moderate number of acid-fast bacilli, with Mycobacterium tuberculosis (MTB) identified via DNA sequencing. Though PCR of the spinal cord lesion was negative for MTB, his presentation was consistent with intramedullary tuberculoma. Dexamethasone and multi-modal anti-mycobacterial treatment (rifampin, isoniazid, pyrazinamide, and ethambutol) were initiated along with intensive physical rehabilitation. Patient made remarkable progress, regaining his ability to walk aided by a cane. He was tapered off dexamethasone and de-escalated to three-agent treatment (isoniazid, rifampin, and pyrazinamide) for planned 12-month course of anti-mycobacterial therapy.

Intramedullary tuberculomas are exceedingly rare and present with symptoms like those of other intramedullary lesions. Despite absence of pulmonary symptoms, supporting evidence from social history, chest imaging, histologic examination, and skin biopsy led to timely diagnosis and treatment of TB in this case. Appropriate anti-mycobacterial therapy and intensive rehabilitation essentially reversed potentially devastating neurologic deficits for our patient. This case illustrates the diagnostic challenge of extrapulmonary TB and highlights the paramount importance of keen history-taking and physical examination.

35) CHARACTERIZING THE MOST COMMON DIAGNOSTIC AND TREATMENT ORDERS IN PATIENTS WITH CLINICAL DETERIORATION AND ASSOCIATION WITH PATIENT OUTCOMES

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Rationale: Identifying appropriate interventions for clinically deteriorating patients is vital to preventing the need for a higher level of care and improving patient outcomes. Although it is well known that an expeditious response to deterioration is essential, there is a need to determine the most common interventions ordered in the setting of clinical deterioration. This knowledge could enhance treatment pathways and identify the optimal resources needed for these events. Therefore, we aimed to determine the most commonly ordered diagnostic, medication, and non-medication treatments in response to clinical deterioration, along with the association between these orders and patient outcomes.

Methods: A total of 4000 patients who were admitted to four health systems between 2006-2020 and had an electronic Cardiac Arrest Risk Triage (eCART) score, a previously validated early warning score, above the 95th percentile were randomly selected for this study. True clinical deterioration was then confirmed via manual chart review. If true clinical deterioration occurred, the diagnostic test and treatment (medication and non-medication) orders were quantified to determine the most common orders. The median number of orders in patients who died in the hospital versus those who survived were also compared.

Results: The most common diagnostic tests ordered in patients with clinical deterioration were complete blood count labs (1162, 12.2%), chest X-rays (1038, 10.2%), and cultures (999, 10.4%). The most common medications ordered were anti-infectives (1147, 22.8%), fluid boluses (834, 16.6%), and antiarrhythmics (466, 9.3%). The most common non-medication orders were consulting non-critical care services (1183, 20.4%), consulting critical care (562, 9.7%), and telemetry (532, 9.2%). Additional orders are shown in Figure 1. The median number of diagnostic and medication orders were similar regardless of outcomes. However, non-medication orders [3(IQR 1-5) vs. 2 (IQR 1-3); $p<.001$] were higher in patients that died than those who survived to discharge.

Conclusions: Greater than half of the diagnostic testing ordered included basic labs along with chest X-ray imaging, blood cultures, and ECG. Approximately one-quarter of medications ordered were anti-infectives, followed by fluid boluses and anti-arrhythmic medications. Consultation to services other than critical care led the non-medication treatments, followed by critical care consult and telemetry. While diagnostic and medication orders were similar in both groups, more non-medication orders occurred in patients who died compared to those who survived. These findings provide important information regarding the most common orders in patients with clinical deterioration, which can inform clinical pathways and resource utilization planning for these patients.

36) BREAKING A SWEAT: A DECADE OF EXERCISE OUTCOMES IN HYPERTROPHIC CARDIOMYOPATHY CLINICAL TRIALS AND THE NEED FOR STANDARDIZED RESULTS

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Background: Hypertrophic cardiomyopathy (HCM) is the most common inherited cardiovascular disorder and has historically been associated with exercise restrictions due to concerns about exacerbating symptoms or sudden cardiac death. However, emerging evidence suggests that structured exercise interventions may be beneficial for patients with both obstructive and non-obstructive HCM. Despite increasing interest in exercise-related outcomes in HCM clinical trials, the heterogeneity of exercise protocols and outcome measures has hindered standardized interpretation of findings.

Objectives: This scoping review synthesizes a decade (2015–2025) of clinical trials evaluating exercise-related outcomes in HCM patients. The study aims to identify trends in exercise parameter reporting, highlight gaps in current methodologies, and propose areas for standardization in future research.

Methods: A systematic search was conducted using PubMed and Scopus to identify peer-reviewed clinical trials that assessed exercise-related outcomes in HCM patients. Inclusion criteria required studies to report at least one exercise capacity parameter, including peak oxygen uptake (pVO_2), metabolic equivalents (METs), workload, exercise duration, or six-minute walk test (6MWT). Data extraction followed the PICO framework, and findings were synthesized using descriptive and exploratory statistical methods.

Results: A total of 29 clinical trials met inclusion criteria. The mean participant age across studies was 53.3 ± 10.7 years, with an overrepresentation of males (60.7%). The majority of trials focused on obstructive HCM (55.2%), with non-obstructive cohorts comprising only 34.5%. Geographically, most trials were conducted in North America, Europe, and East Asia, with significant underrepresentation of African, South American, and South Asian populations. pVO_2 was the most frequently reported exercise metric (76% of trials), followed by workload (24%), METs (17%), and exercise duration (17%). The use of patient-reported outcomes to correlate exercise capacity with quality of life was limited.

Conclusions: Exercise is increasingly recognized as a valuable component of HCM management, yet clinical trials exhibit substantial variability in how exercise outcomes are measured and reported. The predominance of pVO_2 in research underscores its utility, yet its clinical translation remains challenging for patient education. Alternative parameters, such as workload and 6MWT, may offer more accessible measures for real-world application. Additionally, the geographic concentration of HCM research highlights disparities in global representation, necessitating broader inclusion of diverse populations. Standardization of exercise protocols and outcome reporting is essential for advancing the role of exercise in HCM management and ensuring findings are applicable across patient populations.

37) COVID-19 AND RHEUMATOID ARTHRITIS FLARES: A SINGLE-CENTER RETROSPECTIVE COHORT STUDY

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Background: COVID-19 has been associated with the upregulation of pro-inflammatory cytokines which are implicated in the pathogenesis of rheumatoid arthritis (RA). The hyperactivation of lymphocytic populations, particularly Th1/TH 17 during COVID-19 infections suggests a potential link to increased incidence of RA.

Clinical observations indicate 80% of patients with moderate to severe COVID-19 report joint complaints fulfilling American College of Rheumatology criteria for RA. Elevated expression of autoantibodies further suggest an immune-mediated inflammatory response in COVID-19, with possible overlapping pathophysiological mechanisms between the two conditions.

This study was a retrospective analysis of RA patients who experienced COVID-19 and developed RA flares within 6 months of infection. This study highlights the potential for therapy modification in well-controlled RA patients diagnosed with COVID-19. If a significant link between COVID-19 and RA flares is established, it could prompt further research into prophylactic immunosuppressant strategies to mitigate flare risk.

Methods: 197 records were selected with 191 unique patients from Marshfield Clinic Patient Database. Patient details that were collected included: age, sex, race, course of RA, labwork collected after COVID-19, RAPID-3 scores in the 6 month period.

Patient demographics, clinical characteristics, and medications were described using means and SD or counts and percentages. The proportion of the cohort with an RA flare in the six months following COVID-19 diagnosis was reported with a 95% Clopper-Pearson exact confidence interval.

A one-sample test of proportions was used to compare the proportion of flares to rates reported in literature (set as the null hypothesis). Within the cohort, the proportion of flares was compared between patients receiving steroids for COVID-19 and patients that did not.

Fisher's exact test was used to assess for statistical significance. All tests were two-sided with 0.05 significance level. Analysis was completed in R version 4.4.1 with the tidyverse and PropCIs package.

Results: 14.2% of RA patients experienced flares within 6 months of COVID-19 diagnosis, which was lower than historical controls, regarding the rates of average number of flares in the 6 months time.

17% of patients were prescribed steroids for COVID-19 had flares versus 14% in non-steroid group. This showed steroids for COVID-19 did not change rates of RA flares in this cohort ($p=0.7$). 96.8% patients had RA for ≥ 5 years, but the flare rate was low, implying long-standing RA may not inherently increase post-COVID flare risk. CRP elevation (28.4%) was most common post-COVID lab abnormality but no correlation with flares was reported.

RAPID-3 Pre-COVID scores of 9.6 ± 7.1 compared to Post-COVID: 9.5 ± 7.0 with a mean change of -0.2 ± 4.7 displayed no significant change in disease activity. This supports minimal impact of COVID-19 on RA disease activity overall.

Conclusion: Our data suggests that COVID-19 was associated with a lower-than-expected RA flare rate (14%), with no significant link to steroid use or worsening RAPID-3 scores. However, missing data and unmeasured confounders limit definitive conclusions. Considering that RA and COVID-19 likely have similar inflammatory responses, we should consider further exploring the relationship with a larger study with more objective parameters.

38) CNS RELAPSE OF AML PRESENTING AS SUDDEN PAINLESS VISION LOSS

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Background: CNS relapse of AML is rare, occurring in <5% of patients. Hyperleukocytosis, elevated LDH, monocytic AML, and CD56 expression are associated with CNS involvement, as are certain genetic mutations. It is less common in older patients. Presentation is highly variable as AML can affect many different structures in the CNS. Prognosis is poor; though most patients are treated with intrathecal chemotherapy or radiation, there is not an established treatment protocol best suited to CNS relapse.

Case Presentation: An 83-year-old female with past medical history NPM1 mutant AML in remission for 3 years on maintenance azacitidine and venetoclax presented to the ED with headache and vision loss. Two weeks prior, she had begun experiencing sharp, shooting right-sided temporal headaches as well as intermittent frontal scalp tenderness. She was seen by her PCP, where her ESR was elevated to 140, and she was started on prednisone 60 mg daily. Three days prior to admission, she developed monocular blurry vision with green spots. The day of admission, she abruptly and painlessly lost vision in her right eye. She was evaluated by ophthalmology in the ED, who noted a cherry red spot on right fundus exam, suspicious for CRAO. She was also evaluated by rheumatology, who noted new bilateral thigh pain that had improved with prednisone, concerning for an atypical presentation of PMR. She was started on 1g methylprednisolone for presumed temporal arteritis.

However, further review of systems revealed urinary retention with exam showing bilateral patellar hyperreflexia. This prompted an MRI of the lumbar spine, which showed enhancement of the cauda equina nerve roots. Neurology was consulted and recommended a complete spine MRI and lumbar puncture. This further imaging showed heterogenous marrow signal with pathologic enhancement of T2, T7, and T12 vertebral bodies suggestive of leukemic involvement. Lumbar puncture revealed myeloid and monocytoid blasts with occasional Auer rods, diagnostic of AML involvement. Bone marrow biopsy showed low level residual disease. Intrathecal chemotherapy was initiated. Unfortunately, the patient rapidly declined, developing dysphagia and vocal cord paresis within a few days. She expired in the hospital six days after admission.

Discussion: CNS relapse of AML can be difficult to identify given its variable presentation and the absence of routine screening of AML patients for CNS involvement. In this case, the presentation was further obscured by its similarity to a presentation of temporal arteritis. Given her elevated inflammatory markers and unilateral headache, her CRAO was initially attributed to vasculitis; however, with the context of her spinal cord involvement, it is more likely the CRAO was due to the pro-thrombotic environment of AML. Similarly, her thigh pain was attributed to PMR, seen in up to 50% of temporal arteritis patients, but further work-up showed this to be more likely related to AML involvement of her spinal cord. Given the subtle presentation of CNS relapse of AML and its ability to masquerade as other diseases, a high degree of suspicion should be maintained for CNS relapse in patients with a history of AML and new neurologic findings.

39) A CASE OF DISSEMINATED BLASTOMYCOSIS PRESENTING AS RECURRENT NASAL LESION

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Background: Blastomycosis is an endemic fungal infection caused by the dimorphic fungus Blastomyces, most common species being B. dermatididis and B gilchristii in the United States (1). Blastomycosis has a yearly incidence around <2 cases per 100,000 population, however, Wisconsin reports the highest incidence ranging between 10 to 40 cases per 100,000 population (2). Acute pulmonary blastomycosis is the most common form of infection though disseminated infection is possible and the most severe. We present a case of disseminated Blastomycosis in a patient who presented with a recurrent nasal lesion.

Case: A 42-year-old male with a past medical history of unspecified granulomatous process of the nose and tobacco use was evaluated for a nasal lesion. In 2022, he first noticed a lesion on the tip of his nose and over the next 3 years he underwent multiple incision and drainage procedures, punch biopsies and completed empiric courses of antibiotics and antifungals. His workup was largely unremarkable, with biopsy showing an unspecified granulomatous process. It had mostly resolved until February 2025 when it enlarged and now included the nasal bridge. Patient ultimately presented to the emergency department in May 2025 with this progressive nasal lesion, as well as weakness, fatigue, left posterior neck pain and a mass on his right lateral chest wall. Additional history revealed a 3-week history of night sweats and a 15-pound weight loss. He was cachectic appearing on exam, with an erythematous, fungating appearing lesion along his entire nasal bridge. No lymphadenopathy was present, but a seven-centimeter mobile nodule was palpated over the right latissimus dorsi muscle. He underwent extensive evaluation with infectious disease, rheumatology and dermatology consultations. His infectious workup revealed a positive histoplasma urine antigen. MRI of his cervical spine and chest revealed abscesses in the paraspinal musculature of the cervical spine and the latissimus dorsi muscle. He underwent biopsy of his nasal bridge, and both intramuscular abscesses. All sites were positive for fungal elements and ultimately speciated as B. dermatididis. He was started on empiric liposomal amphotericin B and itraconazole, transitioning to itraconazole monotherapy once therapeutic. On discharge patient remained on itraconazole and had improvement in his symptoms.

Discussion: Blastomycosis is an endemic fungal infection that can cause both primary pulmonary and extrapulmonary disease. Extrapulmonary manifestations occur in roughly 25-30% of patients, with the most common site being the skin (3). Skin lesions consist of primarily two forms, verrucous and ulcerative (4), though can vary greatly in appearance. Diagnosis can be difficult and requires a high index of suspicion, especially in cases that have previously been biopsy negative. In addition, though primary cutaneous blastomycosis can occur, skin manifestations suggest disseminated disease and require a broad evaluation for additional sites of infection (4). As in our patient case, this is critical to ensuring appropriate therapy and adequate source control. In endemic areas like Wisconsin, it is imperative clinicians keep endemic fungi, like Blastomycosis, on the differential when encountering cutaneous lesions and understand the propensity for systemic disease.

40) RARE CASE OF ORAL VORICONAZOLE ASSOCIATED HYPOGLYCEMIA

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Basic Research: Voriconazole is a widely used antifungal with known CYP450-mediated drug interactions. Hypoglycemia is listed as an uncommon adverse effect in clinical trials and post marketing use, usually <2% of treated patients, mostly reported with IV formulations. Limited data exist for enteral voriconazole, especially in insulin-dependent patients.

We present a 50-year-old insulin-dependent diabetic male with septic shock, and pulmonary aspergilloma was started on oral liquid voriconazole. Within hours of the first dose, he developed severe hypoglycemia (glucose 27 mg/dL) despite no changes in insulin dosing. C-peptide was low and abdominal imaging ruled out insulinoma. Hypoglycemia recurred with subsequent doses, prompting discontinuation of basal/bolus insulin. Glycemic control was later achieved with low-dose insulin alongside continued voriconazole. Moreover, the patient was not on any other oral hypoglycemic agents. Voriconazole levels were also within normal limits indicating no overdosing as well. Especially in critically sick patient as well as hypoglycemia is usually expected due to stress.

This case highlights a rare but important association between oral voriconazole and hypoglycemia, likely due to altered insulin metabolism. Though the exact interaction between insulin and voriconazole is not clear we can strongly say that hypoglycemia Is likely due to either decreased metabolism of the exogenous insulin or increased reuptake of insulin from the gut. Clinicians should monitor glucose closely and adjust insulin regimens accordingly, especially in patients with renal impairment.

41) A DEVASTATING CASE OF DIC COMPLICATED BY A HISTORY OF MULTIPLE MYELOMA AND ANTIPHOSPHOLIPID SYNDROME

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Introduction: Thrombotic microangiopathy including but not limited to thrombocytopenia purpura (TTP), disseminated intravascular coagulation (DIC) and catastrophic antiphospholipid syndrome (CAPS)- present significant diagnostic challenges due to overlapping features, such as thrombocytopenia and microangiopathic hemolysis. Notable differentiators are fibrinogen dynamics (declining in DIC, stable in TTP/CAPS) and the ISTH DIC score.

Case Description: A 55-year-old male with multiple myeloma (on pomalidomide/dexamethasone), antiphospholipid syndrome, and prior malignancies presented with dyspnea. Critical labs included:

Platelets: 2,000/uL (refractory to transfusion)

PLASMIC SCORE:5 (intermediate TTP risk; creatinine 1.4 mg/dL, MCV 97.5fL, INR 1.3, hemolysis, no transplant, hemolysis and platelets <30)

Fibrinogen: 375-> 87 mg/dL (dynamic hypofibrinogenemia)

Hemolysis: Indirect hyperbilirubinemia, LDH 1688 U/L, Haptoglobin <8 mg/dL and Schistocytes (2-3%)

ADAMTS13 <5% (post-mortem result)

ISTH DIC score >5 (without D-dimer)

Initially, TTP suspicion prompted urgent transfer for plasmapheresis and ICU admission. Unfortunately, the patient exsanguinated and died shortly after admission.

Discussion: Despite TTP-like features Schistocytes, thrombocytopenia, initially normal fibrinogen and an intermediate PLASMIC score, dynamic fibrinogen drop and ISTH score of >5 confirmed DIC- Likely triggered by myeloma progression, pomalidomide toxicity or an occult infection. This case underscores three critical lessons:

Diagnostic pitfalls: PLASMIC score has a high sensitivity, but a lower specificity; intermediate scores require corroboration especially in the context of active malignancies.

Fibrinogen kinetics (normal-> critically low) overrides a static score

Anchoring bias: Overemphasizing schistocytes and PLASMIC scores delayed DIC recognition.

Management Divergence;

TTP: Steroids +/- Plasmapheresis

CAPS: Anticoagulation + immunomodulation (steroid/IVIG)

DIC: Triggers- directed therapy (infection control) + supportive cares (transfusions)

In conclusion, rapid calculations of the ISTH DIC score prevent misdiagnosis in thrombocytopenic patients with complex comorbidities, guiding life-saving therapies and preventing unnecessary and potentially dangerous transfers.

42) IMMUNE CHECKPOINT INHIBITOR COMPLICATIONS IN TRIPLE NEGATIVE BREAST CANCER: EVALUATING ONCOLOGIST MONITORING AND MANAGEMENT OF ADRENAL INSUFFICIENCY AND HYPOPHYSITIS

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Background/ Significance: Triple negative breast cancer (TNBC) is an aggressive subtype of breast cancer. The KEYNOTE-522 Protocol (PROTOCOL), combining standard of care chemotherapy with pembrolizumab improves outcomes but notably risks adrenal insufficiency (AI). Guidelines lack standardized recommendations for routine testing in patients leading to varied practice among oncologists within the Aurora legacy system, Wisconsin (AURORA).

Purpose: This quality improvement project evaluates Adrenocorticotropic hormone (ACTH) and cortisol testing patterns in TNBC patients undergoing neoadjuvant pembrolizumab per PROTOCOL within AURORA. The goal is to enhance care by optimizing monitoring and management of potential AI related to pembrolizumab.

Methods: Utilizing Advocate Health Midwest cancer registry data, we identified TNBC patients receiving neoadjuvant treatment per PROTOCOL between February 1, 2020, and March 31, 2024, within AURORA. Data was obtained through research analytics and manual chart review. Primary outcomes were ACTH and cortisol testing patterns. Secondary outcomes included TNBC frequency and adrenal insufficiency prevalence.

Results: 384 TNBC patients were identified. 123 were found to be treated per PROTOCOL. 55 patients (44.7%) were tested for AI, regardless of symptoms. 238 tests were performed (4.3 tests/patient averaged). Most patients (54.4%) had 1-2 tests, while one patient had 28. Cortisol testing (66.8%) was more common than ACTH (33.2%). 7 patients (12.7%) of those tested were found to have pembrolizumab associated AI.

Conclusion: This study noted variability in AI testing patterns for TNBC patients receiving pembrolizumab. On chart review, approaches ranged from routine screening to symptom-based testing, with fatigue as the main trigger for testing. Notably, fatigue's prevalence in chemotherapy complicates its interpretation as an indicator. Based on our findings, we propose a standardized testing protocol:

Baseline cortisol and ACTH tests before pembrolizumab initiation
Subsequent cortisol testing
Monthly - <6 months
Quarterly - 6-12 months
Biannual - >1 year
Emphasis on preoperative testing to reduce risks associated with subclinical AI.
Future projects may explore:
Socioeconomics influencing testing patterns
Timing of AI across immune checkpoint inhibitors
Incidence of adverse surgical events related to immune checkpoint inhibitors

This standardized approach aims to improve early detection and management of AI, potentially enhancing patient outcomes in TNBC treatment.

43) INSULIN THERAPY IN ACUTE NECROTIZING HYPERTRIGLYCERIDEMIA-INDUCED PANCREATITIS: A CASE REPORT

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Introduction: Hypertriglyceridemia-induced acute pancreatitis (HTG-AP) is a rare but serious form of acute pancreatitis, typically occurring when serum triglyceride (TG) levels exceed 1,000 mg/dL. Free fatty acids (FFAs) released from TG hydrolysis exert direct cytotoxic effects on pancreatic acinar cells, leading to inflammation, necrosis, and potential multi-organ failure. While plasmapheresis can rapidly lower TG levels, it is often unavailable in resource-limited settings. Intravenous insulin has emerged as a practical and effective alternative, particularly in patients with concurrent hyperglycemia.

Case Description: A 38-year-old male with no significant past medical history presented with one day of severe, persistent epigastric pain following consumption of a high-fat meal. He reported associated nausea, vomiting, chills, chest discomfort, and shortness of breath. He denied alcohol use and had no known family history of dyslipidemia or pancreatitis. On examination, he was tachycardic and hypertensive with abdominal distention and diffuse tenderness. Laboratory findings revealed TG level of 3,590 mg/dL, lipase 488 U/L, glucose 365 mg/dL, sodium 130 mmol/L, potassium 5.6 mmol/L, and WBC count 19.4 ×10□/L. A computed tomography of the abdomen and pelvis (CTAP) showed acute necrotizing pancreatitis with hepatic steatosis, duodenitis, and gastric distention. His presentation met systemic inflammatory response syndrome criteria and raised concern for early organ dysfunction.

Due to a lack of access to plasmapheresis, intravenous (IV) insulin therapy was initiated. TG levels decreased to 1,687 mg/dL within 48 hours and fell below 500 mg/dL by hospital day 9. The patient also received aggressive fluid resuscitation, nasogastric suction, and empiric meropenem for suspected infected necrosis. As symptoms improved, insulin was transitioned to subcutaneous glargine and lispro, and oral fenofibrate and atorvastatin were added. He completed a 10-day hospitalization and was discharged on a low-fat diet with outpatient follow-up in primary care, gastroenterology, and endocrinology.

Discussion: This case highlights a severe presentation of necrotizing HTG-AP in an otherwise healthy individual, effectively managed without plasmapheresis. IV insulin proved to be a viable and accessible alternative, facilitating rapid TG reduction while addressing hyperglycemia. CT imaging was essential in diagnosing necrosis and guiding supportive care. The patient's full recovery and TG control at follow-up reinforce the clinical utility of insulin therapy in resource-constrained environments. Long-term management requires dietary modification, lipid-lowering agents such as fibrates and omega-3 fatty acids, and addressing secondary risk factors including obesity, diabetes, and alcohol use. Patient education, adherence to pharmacologic therapy, and regular lipid monitoring are critical to preventing recurrence. This case underscores the importance of early recognition and individualized management in HTG-AP and supports insulin therapy as a first-line option when advanced modalities are unavailable.

44) WHEN TIME IS CRITICAL: A CASE OF GANGRENOUS ACALCULOUS CHOLECYSTITIS AND SEPSIS-ASSOCIATED ENCEPHALOPATHY IN A DIABETIC PATIENT

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Introduction: Acute acalculous cholecystitis (AAC) is a rare but serious form of gallbladder inflammation that occurs in the absence of gallstones. It accounts for 5–10% of all cases of acute cholecystitis and is more commonly seen in critically ill patients, particularly those with comorbidities such as diabetes mellitus, sepsis, trauma, or prolonged fasting. Unlike calculous cholecystitis, AAC carries a higher risk of gangrene, perforation, and systemic complications due to delayed diagnosis and atypical presentations. The pathogenesis is multifactorial and may involve gallbladder ischemia, bile stasis, and bacterial translocation. Because of its nonspecific symptoms and subtle early signs, timely recognition is critical to prevent rapid deterioration and high mortality.

Case Description: A 64-year-old woman with a medical history of type 2 diabetes mellitus, hypertension, hyperlipidemia, coronary artery disease, and prior ischemic stroke presented with one day of nausea, vomiting, and diffuse abdominal pain. She exhibited signs of systemic inflammatory response syndrome, and imaging revealed a necrotic, perforated gallbladder without gallstones. She was diagnosed with acute gangrenous acalculous cholecystitis complicated by severe sepsis. Initial management included intravenous fluids and broad-spectrum antibiotics (piperacillin-tazobactam). On hospital day 2, she underwent laparoscopic subtotal cholecystectomy.

Postoperatively, she developed acute metabolic encephalopathy, progressing toward septic shock, and was admitted to the intensive care unit. Micafungin was initiated for empiric antifungal coverage. Laboratory findings showed resolving leukocytosis and lactic acidosis, but she developed anemia without identifiable bleeding on imaging. Her agitation worsened, requiring a dexmedetomidine drip, and a hepatobiliary iminodiacetic acid scan performed on postoperative day 5 showed no evidence of bile leak. By postoperative day 6, her clinical status improved with normalization of white blood cell count, liver enzymes, and mental status on continued antibiotics.

Discussion: This case highlights the severe and often deceptive nature of AAC, especially in patients with metabolic risk factors such as diabetes. AAC frequently progresses rapidly; studies suggest that gangrene occurs in up to 50% of cases and gallbladder perforation in approximately 10%. Even with prompt intervention, mortality rates can reach 30%. The absence of gallstones and nonspecific early symptoms can delay diagnosis, increasing the risk of severe complications like sepsis-associated encephalopathy, as seen in this patient.

The decision to initiate empiric antifungal therapy reflects the complexity of managing sepsis in the postoperative setting, where fungal sources may be suspected despite negative cultures. Additionally, this case underscores the limitations of imaging and lab trends in predicting clinical decline or improvement.

Clinicians must maintain a high index of suspicion for AAC in high-risk patients, even if they are not critically ill on presentation. Early surgical consultation and aggressive management are essential to improving outcomes in this often underrecognized and potentially fatal condition.

45) TRANSFUSION-RELATED ACUTE LUNG INJURY (TRALI) FOLLOWING INTRAVENOUS IMMUNOGLOBULIN INFUSION IN A PATIENT WITH MYASTHENIA GRAVIS

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Introduction: Transfusion-related acute lung injury (TRALI) is a rare but potentially fatal complication of blood product transfusion and remains a leading cause of transfusion-related mortality. It presents as acute hypoxemia and non-cardiogenic pulmonary edema within six hours of transfusion, without evidence of left atrial hypertension or pre-existing acute lung injury (ALI). The consensus definition by Vlaar et al. identifies TRALI as a clinical syndrome marked by bilateral infiltrates, hypoxemia, and the absence of alternative ALI risk factors, and explicitly recognizes intravenous immunoglobulin (IVIG) as a potential cause.

IVIG, a pooled human plasma derivative, is frequently used in treating immune-mediated neurologic and hematologic diseases. Common complications include hypersensitivity reactions and volume overload, but TRALI is rare and likely underrecognized. Muller et al. documented 17 cases of IVIG-associated TRALI, particularly in neurologic conditions like myasthenia gravis, with high mortality. We present a case of TRALI following IVIG infusion in a patient with myasthenia gravis to highlight the need for clinical vigilance.

Case Report: An 82-year-old male with ocular myasthenia gravis presented with a one-week history of worsening ptosis, diplopia, dysphagia, and progressive lower limb weakness, suggestive of exacerbation. He had no recent transfusions, lung disease, or ALI risk factors. Treatment was initiated with prednisone, pyridostigmine, and mycophenolate mofetil. IVIG (1 g/kg/day over 4 hours) was started. Within 30 minutes of infusion, the patient developed acute respiratory distress, fever, hypotension, and severe hypoxemia, along with agitation and hallucinations.

The infusion was stopped immediately. Chest X-ray showed bilateral infiltrates consistent with non-cardiogenic pulmonary edema. Physical exam revealed tachycardia and respiratory distress without jugular venous distension. Bedside ultrasound showed a small, collapsible inferior vena cava and normal cardiac function, ruling out volume overload or left atrial hypertension. Emergent intubation was required.

The diagnosis of TRALI was based on Vlaar et al.'s criteria: acute onset within 6 hours, hypoxemia, bilateral infiltrates, no pre-existing ALI or alternative risk factors, and normal cardiac findings. Differential diagnoses such as transfusion-associated circulatory overload (TACO), anaphylaxis, and sepsis were excluded. Plasmapheresis was initiated for myasthenic crisis. The patient was extubated after two sessions and discharged on immunosuppressive therapy.

Discussion: This case illustrates IVIG-induced TRALI in a patient with myasthenia gravis. The rapid onset and non-cardiogenic pulmonary edema confirmed the diagnosis. TRALI may involve a two-hit mechanism: neutrophil priming by patient factors and activation by donor-derived antibodies or mediators in IVIG. High-dose IVIG may increase this risk.

Clinicians should suspect TRALI in patients developing respiratory distress within 6 hours of IVIG, especially with bilateral infiltrates and absence of fluid overload. Bedside ultrasound helps differentiate TRALI from TACO. The patient's symptoms—fever, hypotension, and agitation—are consistent with reported IVIG-related TRALI cases.

While steroids were continued for myasthenia treatment, their role in TRALI remains uncertain. Plasmapheresis may have helped by removing offending agents. Mortality in such cases can be high, underscoring the need for close monitoring, slow infusion rates, and reporting suspected cases to improve hemovigilance and safety practices. As IVIG use grows, awareness of this rare complication is crucial.

46) INFLAMMATORY HILAR MASS AND CAVERNOUS TRANSFORMATION IN DISSEMINATED HISTOPLASMOSIS: A RARE CAUSE OF NON-CIRRHOTIC PORTAL HYPERTENSION

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Background: Disseminated histoplasmosis is a rare but serious fungal infection typically seen in immunocompromised individuals. Hepatic involvement is common, however non-cirrhotic portal hypertension secondary to extrahepatic lymphadenopathy has not been previously reported. We describe a unique case of disseminated histoplasmosis in an immunocompetent host complicated by fibrosing lymphadenitis in the porta hepatis causing portal vein compression and non-cirrhotic portal hypertension.

Methods: A retrospective review of one patient's clinical course, imaging, histopathology, and treatment response was performed. The patient was followed across multiple hospitalizations for complications related to disseminated histoplasmosis, including cholangitis, spontaneous bacterial peritonitis, and portal hypertension.

Results: A 68 year old male previously misdiagnosed with sarcoidosis and treated with steroids and methotrexate developed systemic symptoms and pancytopenia. Duodenal biopsy and bone marrow aspirate confirmed disseminated histoplasmosis involving the lungs, GI tract, lymph nodes, and marrow. Despite liposomal amphotericin B and prolonged itraconazole therapy, he developed progressive portal hypertension with ascites, varices, and recurrent spontaneous bacterial peritonitis. Imaging showed a growing porta hepatis mass causing segmental portal vein occlusion, biliary obstruction, and cavernous transformation. Liver biopsy confirmed non-cirrhotic parenchyma; hilar mass biopsy showed reactive fibrosing lymphadenitis without malignancy or fungal elements. Persistent histoplasma antigen serum positivity and suboptimal antifungal response raised concern for immune reconstitution inflammatory syndrome (IRIS). He was treated with biliary stenting, antifungals, prednisone, diuretics, lactulose, and intermittent paracentesis, with subsequent improvement. This case highlights a rare extrinsic cause of non-cirrhotic portal hypertension due to fibrosing immune response in disseminated histoplasmosis.

Conclusion: This is a novel reported case of disseminated histoplasmosis presenting with non-cirrhotic portal hypertension due to fibrosing lymphadenitis compressing the portal vein. The compressive pathophysiology resembles sclerosing mediastinitis, a known fibrosing complication of histoplasmosis. Clinicians should consider external compression from reactive lymphadenopathy as a rare etiology of portal hypertension, particularly in patients with disseminated fungal infections and no intrinsic hepatic disease. Management requires a multidisciplinary approach including antifungal therapy, supportive care for portal hypertension, and consideration of immunomodulation in suspected IRIS.

47) A CASE SERIES OF LYMPHANGIOLEIOMYOMATOSIS – A RARE GENETIC CONDITION LEADING TO CYSTIC LUNG DISEASE

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Background: Lymphangioleiomyomatosis (LAM) is a disease of the lung parenchyma caused by the proliferation of atypical smooth muscle-like cells within the lung vasculature, lymphatics, and alveoli. This leads to cystic lung destruction and symptoms of dyspnea, fatigue, and productive cough. A common complication of LAM is spontaneous pneumothorax, while extrapulmonary manifestations include benign tumors in multiple organs. Notably, this disease predominantly affects premenopausal women around 35 years of age and can occur sporadically or be associated with tuberous sclerosis complex. The gold standard for diagnosing LAM is lung biopsy with findings of smooth muscle proliferation in alveolar walls and vascular beds on H&E stain, and positive immunostaining for HMB-45, actin, myosin, estrogen and progesterone.

Case Presentations: Case one highlights a 54-year-old immunocompromised female with a history of pneumothoraces secondary to LAM (on sirolimus) who presented to the emergency department with a two-day history of worsening dyspnea. She was found to have acute hypoxemic respiratory failure requiring 4L of oxygen. Imaging was notable for bilateral lower lobe opacities and multiple thin-walled cysts. The patient was admitted for treatment of community acquired pneumonia and is being considered for a lung transplant. Case two highlights a 50-year-old female with chronic respiratory failure from sporadic LAM, requiring 4 liters of oxygen at baseline, and a pneumothorax one week prior. She presented to the emergency department with two days of anxiety, labile blood pressures, and dyspnea. She was found to have a right apical pneumothorax requiring chest tube placement. The chest tube was removed after two days, but the patient developed a recurrent pneumothorax. The patient declined pleurodesis and lung transplant and chose to pursue palliative care.

Discussion: Treatment of LAM aims to control symptoms, slow disease progression, and improve quality of life for patients. The mainstay therapy includes Sirolimus, an mTOR inhibitor that effectively controls the growth of abnormal smooth muscle cells and has a reasonably good safety profile. Symptomatic control includes bronchodilators, respiratory rehabilitation, and medications. In refractory cases of pneumothorax, pleurodesis with talc is recommended. Lung transplant is the best option for those with worsening symptoms and lung function despite supportive treatment and medications, although there have been some cases with recurrence of LAM after lung transplantation. The prognosis for LAM is improving, with a median survival of 29 years from symptom onset and 23 years from diagnosis in transplant-free patients.

48) PAN-SEROSITIS SECONDARY TO COXSACKIE B VIRUS: A RARE PRESENTATION WITH CARDIAC TAMPONADE AND MULTISYSTEM INVOLVEMENT

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Background: Coxsackie B virus, an enterovirus with six serotypes, is well-recognized for causing myocarditis and pericarditis through interaction with the Coxsackie and adenovirus receptor (CAR) located in cardiac intercalated discs. While cardiac involvement secondary to viral infection is a known sequela, widespread serous membrane inflammation encompassing multiple serous membranes (pan-serositis) from Coxsackie B virus represents an uncommon and potentially life-threatening complication.

Case Presentation: A 47-year-old male presented to the emergency department with acute encephalopathy and hypotension. He was found to have a moderate-sized pericardial effusion leading to cardiac tamponade and obstructive shock. An urgent pericardiocentesis was performed, and the patient was transferred to the intensive care unit. Labs revealed acute kidney injury, transaminitis, synthetic liver dysfunction, anion gap metabolic acidosis, leukocytosis, anemia, and hypothyroidism. Imaging showed periportal edema, ascites, and bilateral small pleural effusions. The leading diagnosis was viral pericarditis complicated by myxedema crisis, though other infectious and autoimmune etiologies were considered given multiorgan dysfunction. Empiric antibiotics, acyclovir, stress dose steroids, and IV levothyroxine were initiated for suspected meningitis, and newly diagnosed hypothyroidism. Extensive workup was performed to evaluate for malignancy, tuberculosis, Lyme disease, autoimmune encephalitis, and other viral etiologies such as EBV, parvovirus, and HSV. As results returned negative and the patient demonstrated clinical improvement, the antibiotics and antivirals were discontinued, while the steroids were tapered and Synthroid continued. At the time of discharge, some results were still pending, and these later returned positive only for Coxsackie B virus antibodies.

Discussion: This complex case highlights the difficulty in establishing a unifying diagnosis to explain the patient's encephalopathy, pan-serositis, liver dysfunction, and non-specific symptoms. Malignancy, infection, and autoimmune etiologies were considered, but the majority were ruled out through comprehensive lab work, imaging, and pericardial fluid analysis. Despite diagnostic uncertainty, infection with Coxsackie B virus was a unifying diagnosis that could account for the patient's systemic symptoms. While enterovirus infections are known to cause cardiac complications, they can be overlooked when patients present with multisystem organ involvement and pan-serositis. Of note, the differential for pan-serositis is broad, but includes rheumatologic conditions (such as connective tissue diseases), endocrine disorders (such as hypothyroidism), kidney disease (such as uremia), and malignancy. This unique case emphasizes the importance of maintaining a broad differential, but high index of suspicion for viral etiologies, which can aid in early recognition and treatment.

49) PROTEIN C DEFICIENCY ASSOCIATED REFRACTORY THROMBOSIS

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Protein C and Protein S are vitamin K-dependent anticoagulant proteins synthesized in the liver. Activated Protein C (APC), with Protein S as a cofactor, inactivates factors Va and VIIIa, thereby regulating coagulation and enhancing fibrinolysis. We present the case where thrombosis progressed despite being on therapeutic anticoagulation. A 25-year-old male with heterozygous protein C deficiency, May -Thurner syndrome, a prior left iliac vein stent, and a history of bilateral pulmonary embolism presented with severe abdominal pain. He had not been on anticoagulation due to personal preference. A contrast-enhanced CT abdomen and pelvis revealed acute thrombosis involving the portal, superior mesenteric, and splenic veins, with a patent left iliac stent confirmed by CT venography. Heparin infusion was initiated, and interventional radiology performed trans-arterial thrombolytic infusion with tPA, as a direct portal vein access was deemed high risk. Despite therapeutic anticoagulation and thrombolysis, the patient developed acute ischemia of the left lower extremity due to new arterial thrombi involving the profunda femoris, popliteal, and tibial arteries. Although a heparin induced thrombocytopenia (HIT) testing was negative, bivalirudin was initiated given the high clinical suspicion. Further imaging revealed thrombus in the superior mesenteric artery, infarcts in the liver and left kidney, and occlusions in the right iliac and femoral arteries. The patient underwent emergent exploratory laparotomy with small bowel resection, left leg fasciotomies, and multiple arterial embolectomies. During his surgical ICU stay, progressive bowel necrosis prompted a second-look laparotomy, resulting in further resection including an extended right hemicolectomy. The patient stabilized postoperatively and was transferred to a higher center for small bowel transplantation. Individuals with Protein C and Protein S deficiencies are predisposed to thrombophilia, increasing the risk of venous thromboembolic events such as deep venous thrombosis, portal vein thrombosis, pulmonary embolism, and disseminated intravascular coagulation. Most patients with protein C deficiency respond to oral anticoagulant therapy. However, there are cases in which thrombosis progresses despite being on oral anticoagulation and clinicians need to be aware about this so that alternative therapeutic options can be considered. Currently, there are no studies that identify characteristics of patients with protein C deficiency who are refractory to anticoagulant or thrombolytic therapy. Further research needs to be done to identify variations in the genetic mutations that can potentially cause resistance to anticoagulant therapy.

50) RECURRENT NEISSERIA MENINGITIDIS BACTEREMIA IN A PATIENT WITH PAROXYSMAL NOCTURNAL HEMOGLOBINURIA ON ECULIZUMAB: A CASE FOR LIFELONG PROPHYLAXIS

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Introduction: Paroxysmal nocturnal hemoglobinuria (PNH) is a rare hematologic disorder characterized by complement-mediated intravascular hemolysis, bone marrow failure, and thrombosis. Eculizumab, a monoclonal antibody targeting terminal complement protein C5, has dramatically improved disease outcomes. However, by blocking the terminal complement cascade, it impairs the immune response to encapsulated organisms, especially Neisseria meningitidis, increasing the risk of invasive meningococcal disease by over 1,000-fold. Despite vaccination and prophylaxis, breakthrough infections can occur. We present a case of recurrent Neisseria meningitidis bacteremia in a young woman with PNH on eculizumab.

Case Presentation: A 28-year-old woman with a history of aplastic anemia treated with antithymocyte globulin in 2011, and PNH diagnosed in 2018 complicated by Neisseria meningitidis bacteremia, presented with fever, right lower quadrant pain, vomiting, and diffuse myalgias. She had been performing exercise prior to symptom onset and reported associated neck pain, dizziness, and transient peripheral visual blurring. She received eculizumab every two weeks, with her next dose having been due in several days. Though previously prescribed ciprofloxacin and penicillin for meningococcal prophylaxis, she had not been taking them regularly due to gastrointestinal side effects.

In the emergency department, she met SIRS criteria (temperature 102°F, HR 100s, lactate 2.4). Laboratory evaluation showed hemoglobin 10.9 g/dL, undetectable haptoglobin, and otherwise unremarkable labs. Imaging including CT abdomen/pelvis and transvaginal ultrasound was negative for acute pathology. Blood cultures were obtained, and empiric antibiotics were initiated. Attempts at lumbar puncture were unsuccessful. She improved symptomatically overnight, though continued to endorse dizziness and fatigue.

Blood cultures returned positive for Neisseria species at 42 hours. Ceftriaxone was continued for coverage, and vancomycin was discontinued. 16S rRNA sequencing confirmed Neisseria meningitidis. Although the patient lacked classic meningitis symptoms, a full 7-day course of IV ceftriaxone was completed given her increased risk. She was discharged in stable condition with Penicillin V 250 mg twice daily for indefinite prophylaxis and instructed to follow up with Hematology.

Her Hematology team recommended continuing eculizumab due to stable hemoglobin levels and concerns about pregnancy risks associated with newer agents like iptacopan. She previously received booster vaccines earlier in the year and had protective titers as of 2020. The isolated strain was non-groupable and not covered by standard vaccine serotypes.

Discussion: This case underscores the persistent and potentially fatal risk of invasive meningococcal infection in patients treated with eculizumab, even with vaccination. Recurrent bacteremia with a non-vaccine serotype reinforces the need for lifelong antibiotic prophylaxis. While newer proximal complement inhibitors may preserve bacterial killing, safety data remain limited. Until such options are validated, patients require strict adherence to vaccination schedules, antibiotic prophylaxis, consideration of medical alert bracelets utilization, and close monitoring to reduce the risk of meningococcal infections. Additionally, this case highlights the importance of physician awareness of eculizumab's risk of invasive meningococcal infections.

51) PSEUDO-TTP DUE TO PERNICIOUS ANEMIA: RECOGNIZING A REVERSIBLE CAUSE OF MAHA

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Introduction: Severe vitamin B12 deficiency is a reversible yet potentially life-threatening cause of pancytopenia, hemolysis, and neurologic dysfunction. When advanced, it can mimic thrombotic microangiopathies (TMAs), such as thrombotic thrombocytopenic purpura (TTP), with overlapping features including schistocytosis, thrombocytopenia, and markedly elevated lactate dehydrogenase (LDH). This phenomenon, often termed pseudo-thrombotic microangiopathy, is typically due to ineffective erythropoiesis rather than true endothelial injury. Timely differentiation between TTP and B12 deficiency is critical, as their treatment strategies differ significantly and misdiagnosis can lead to unnecessary and potentially harmful interventions. We report a case of pernicious anemia presenting as pseudo-TMA in a patient with profound B12 deficiency.

Case Presentation: A 69-year-old woman with a history of stage IA breast cancer presented with several months of progressive fatigue, dyspnea on exertion, anorexia, and an unintentional 10-pound weight loss. She also noted oral discomfort and increased sensitivity to certain foods, as well as recent mild right-hand neuropathy. Her symptoms intensified after the recent sudden death of her husband, which also led to increased emotional stress and decreased oral intake. She denied fevers, overt bleeding, infections, or recent travel exposures.

On arrival, she was febrile to 100.5°F and tachycardic (HR 110 bpm). Examination revealed pallor, features of atrophic glossitis, and trace bilateral lower extremity edema without focal neurologic deficits. Laboratory evaluation showed pancytopenia: hemoglobin 3.8 g/dL, WBC 4.1 K/μL, and platelets 42 K/μL. Macrocytosis (MCV 125 fL) and significantly elevated LDH (4,757 U/L) were present. Haptoglobin was undetectable, and indirect hyperbilirubinemia was noted. Peripheral smear revealed schistocytes, teardrop cells, and hypersegmented neutrophils. Reticulocyte count was low despite severe anemia. ADAMTS13 activity was mildly decreased at 36%—inconsistent with the <10% typically seen in TTP. Coagulation studies showed an INR of 1.4 and a positive fibrin monomer test. Infectious workup including HIV, hepatitis viruses, and tick-borne pathogens was negative. Vitamin B12 was undetectable (<170 pg/mL), with elevated methylmalonic acid and homocysteine. Positive intrinsic factor and parietal cell antibodies confirmed a diagnosis of pernicious anemia.

Given initial concern for TTP, the patient received one dose of IV methylprednisolone in the emergency department. Hematology was urgently consulted, and she was started on intramuscular vitamin B12 (1,000 mcg daily for 3 days). She also received packed red blood cell transfusions to maintain hemoglobin >7 g/dL. Over the following days, her hemoglobin and platelet count improved, LDH levels declined, and her symptoms—including oral discomfort, fatigue, and cognitive fog—resolved. She transitioned to biweekly, then monthly B12 injections once her methylmalonic acid normalized. Outpatient esophagogastroduodenoscopy revealed atrophic gastritis without other abnormalities.

Discussion: This case underscores the importance of recognizing vitamin B12 deficiency as a rare mimicker of TTP. While schistocytosis and elevated LDH may raise concern for MAHA, distinguishing features—including macrocytosis, low reticulocyte production, and modest ADAMTS13 reduction—support ineffective erythropoiesis rather than true microvascular injury. Timely diagnosis avoids unnecessary plasma exchange and enables full recovery with vitamin B12 repletion alone.

52) ACUTE HYPERSENSITIVITY REACTION TO GADOLINIUM BASED CONTRAST AGENT IN A PATIENT WITH PRIOR IODINATED CONTRAST ALLERGY

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A 73-year-old male patient with medical history significant for hypertension, hyperlipidemia, monoclonal gammopathy of undetermined significance (MGUS), diverticulitis with a history of perforation requiring colostomy, deep vein thrombosis (DVT), nephrolithiasis, irritable bowel syndrome (IBS), and a history of prostate cancer presented to the Emergency Department with concerns of hypersensitivity reaction due to gadolinium contrast in cardiac MRI. He was undergoing cardiac evaluation for frequent premature ventricular contractions (PVCs) and dyspnea on exertion. The patient had a history of allergy to iodinated contrast agents used in CT scan. Immediately following the administration of gadolinium, he developed hives on his right upper extremity and throat tightness. He denied shortness of breath, chest pain, palpitations, abdominal pain, fever, chills, or incontinence. No stridor or wheezing was noted. He was promptly treated with 50 mg of intravenous diphenhydramine and 125 mg of intravenous methylprednisolone. After receiving these medications, most of his symptoms resolved, although he continued to experience some voice changes and mild throat tightness. 25 mg of intravenous diphenhydramine was administered every six hours as needed. Due to the incomplete cardiac MRI study, the patient was referred to cardiology for further evaluation and recommendations. The patient was discharged after his symptoms resolved.

Medical Student Posters

1) CHOLESTATIC PATTERN AS PRESENTING FEATURE OF CMV HEPATITIS – A DIAGNOSTIC CHALLENGE

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Background: Cytomegalovirus (CMV), a member of the Herpesviridae family, is typically asymptomatic in immunocompetent individuals but can cause life-threatening complications in immunocompromised patients. CMV hepatitis, a rare manifestation, is characterized by elevated AST and ALT levels—rarely exceeding five times the normal limit—along with moderate increases in bilirubin and ALP. The infrequency of such severe complications makes CMV hepatitis a formidable diagnostic challenge.

Case presentation: A 64-year-old female with a medical history of rheumatoid arthritis (on Rituximab), type 2 diabetes mellitus, hypertension, and a history of pulmonary embolism (on Eliquis) presented with generalized weakness and watery diarrhea for 10 days. On admission, the patient was hypotensive (BP 90/65 mmHg) and tachycardic (heart rate in the 110s). She received intravenous fluids for volume repletion. Initial workup included negative stool cultures and Clostridium difficile testing. Due to immunosuppression from Rituximab, CMV NAAT was performed, showing a viral load of 139,000 IU/mL. Colonoscopy and biopsy confirmed CMV colitis. Liver function tests were mildly elevated (AST/ALT/ALP: 66/42/233 U/L; total bilirubin: 0.9 mg/dL) but not further investigated. She was discharged on Valganciclovir.

On readmission two days later for worsening fatigue, liver function tests showed AST/ALT/ALP of 203/103/1082 U/L and total bilirubin of 2.2 mg/dL, peaking at AST/ALT/ALP of 295/282/1003 U/L and total bilirubin of 2 mg/dL. Subsequent MRI revealed extrahepatic bile duct dilation without choledocholithiasis, and gallstones were noted without acute findings. Autoimmune and infectious hepatitis workups were negative. Liver biopsy showed acute hepatitis with spotty necrosis. The patient was diagnosed with multi-organ CMV involvement, including colitis and hepatitis.

Discussion: Primary CMV infections are typically asymptomatic or mimic mononucleosis in immunocompetent patients. Severe gastrointestinal or liver involvement is rare and primarily affects relatively immunocompromised individuals. Our patient presented with constitutional symptoms, watery diarrhea, and progressive elevation of liver enzymes leading to a diagnosis of acute CMV hepatitis with multi-organ CMV involvement. Reflecting on this case, acute CMV hepatitis should remain a priority on the list of differentials for immunocompromised individuals presenting prodromal symptoms of acute hepatitis with cholestatic pattern. This case highlights a rare presentation of a typically self-limiting disease in immunocompetent patients.

2) RITUXIMAB-INDUCED COLITIS MIMICKING INFLAMMATORY BOWEL DISEASE IN A PATIENT WITH MANTLE CELL LYMPHOMA

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Background: Rituximab, a monoclonal antibody targeting the CD20 antigen on B cells, is widely used in the treatment of hematologic malignancies and autoimmune diseases. While generally well tolerated, it has been implicated in various gastrointestinal complications, including diarrhea, bowel perforation, and rarely, the emergence of inflammatory bowel disease (IBD)-like syndromes. These adverse effects are thought to result from its broad depletion of systemic and intestinal lymphocytes. Notably, discontinuing rituximab may not lead to symptom resolution, and patients often require targeted immunosuppressive therapy to achieve clinical improvement. The infrequency of such severe complications makes rituximab-induced colitis a formidable diagnostic challenge.

Case presentation: A 68-year-old female marathon runner with a history of mantle cell lymphoma in remission on rituximab (last dose held due to gastrointestinal symptoms) presented with four months of non-bloody, watery diarrhea, early satiety, and ~10 lbs weight loss. She reported 4–5 stools daily, nocturnal symptoms, weakness, and lower abdominal cramping. Past episodes of diarrhea and mouth ulcers had spontaneously resolved a year prior. Initial workup for celiac disease, infectious etiologies, and thyroid or pancreatic dysfunction was unremarkable.

On admission, she was borderline hypotensive with mild abdominal tenderness. Hemoglobin was decreased (8.7 g/dL from baseline ~10). Colonoscopy revealed an obstructive sigmoid mass and a transverse colon lesion, both ulcerated. Biopsies showed severe active colitis with ulceration, cryptitis, and crypt abscesses, but no malignancy or chronic inflammatory changes. Infectious and viral stains (CMV, adenovirus, H. pylori, Giardia) were negative. CT imaging showed circumferential wall thickening suggestive of an inflammatory or neoplastic process. Differential diagnoses at this time included inflammatory bowel disease, namely ulcerative colitis, drug-induced colitis, and colitis secondary to diverticular disease.

Colorectal surgery was consulted due to concern for acute progression to obstruction from possible strictures, and total colectomy was discussed. However, after initiating IV methylprednisolone, the patient improved clinically. Given the timing and presentation, rituximab-induced colitis was suspected. She was discharged on prednisone with symptom resolution and cessation of rituximab.

Discussion: Rituximab-induced colitis is a rare but increasingly recognized complication, likely related to B-cell depletion and disrupted mucosal immune homeostasis. In this case, the patient's presentation with obstructive colonic lesions, weight loss, and diarrhea raised concern for malignancy or inflammatory bowel disease. However, biopsy findings of severe active colitis without chronic features, negative infectious workup, and her recent rituximab exposure supported a drug-induced etiology. Notably, her rapid response to corticosteroids further supports this mechanism. Colorectal surgery was considered due to obstructive features and potential for acute worsening, highlighting the severity of inflammation. This case underscores the diagnostic complexity of rituximab-associated colitis and the importance of early recognition to avoid unnecessary surgical intervention. Given that symptoms may persist despite cessation of therapy, management often requires immunosuppressive treatment. Clinicians should maintain a high index of suspicion for this entity in patients receiving rituximab who develop unexplained gastrointestinal symptoms.

3) RENAL CELL CARCINOMA PRESENTING AS POLYRADICULOPATHY: A CASE REPORT

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Introduction: Renal cell carcinoma (RCC) is known for its potential to metastasize to bone in nearly half of cases, yet vertebral involvement remains relatively rare, particularly in the absence of classic renal symptoms. Spinal cord compression as a presenting feature of RCC is uncommon and poses a diagnostic and therapeutic challenge.

Case Presentation: A 54-year-old female with a complex medical history including Cushing's disease (status post left adrenalectomy), Graves' disease transitioned to Hashimoto thyroiditis, obesity, asthma, and hypertension, presented with repeated falls, mid-thoracic numbness, and progressive bilateral lower extremity weakness. An initial emergency department evaluation with Magnetic Resonance Imaging (MRI) of the cervical spine and brain was unrevealing. Repeat imaging during outpatient workup included an MRI of the thoracic and lumbar spine, which revealed a T5 epidural mass with Bilsky 3 spinal cord compression and T5–T6 foraminal stenosis. Neurological exam was notable for sensory deficits below T5 and bilateral lower extremity weakness. Emergent T1–T10 spinal fusion with T5 partial corpectomy and decompression was performed. Intraoperative biopsy revealed metastatic RCC. Subsequent imaging identified a large right lower pole renal mass though the patient had no associated renal symptoms.

Discussion: This case underscores the potential for RCC to present with isolated osseous metastases involving the thoracic spine, in the absence of hematuria or flank pain. Renal cell carcinoma metastasis to the bone occurs in about 50% of patients, with a 15% chance of metastasis to the vertebral body, spinal cord compression is reported in only 5–14% of cases [1]. Pathological fractures are the primary presentation in 30% of these cases. Although our patient had a pathological fracture causing severe spinal cord compression, she also had osteolytic lesions and no pathologic renal symptoms. This patient's neurologic decline, subtle symptomatology, and lack of prior malignancy history contributed to a delayed diagnosis. Spinal metastasis with spinal compression is seen in 5-14% of patients, management is difficult due to the balance between preserving neurological function, achieving spinal stability, and addressing the malignancy.

Conclusion: Clinicians should maintain a high index of suspicion for metastatic malignancy in patients presenting with progressive radiculopathy, even in the absence of a known primary tumor [2]. Early recognition and multidisciplinary management are critical to preserving neurologic function and optimizing outcomes.

4) NOT SO SWEET RELIEF: UNMASKING A GLIPTIN SIDE EFFECT

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Introduction: Diabetes is associated with increased likelihood of musculoskeletal pain compared to the general population. This can present a diagnostic challenge, as the evaluation of diffuse pain can be difficult, with a firm diagnosis sometimes proving elusive. To increase the complexity of understanding pain in these patients, certain anti-diabetic medications, particularly dipeptidyl peptidase-4 (DPP-4) inhibitors like sitagliptin, have been associated with increased risk of arthralgias, a clinically significant side effect that manifests as non-inflammatory joint pain with negative autoimmune markers.

Case Description: A middle-aged woman with a history of type 2 diabetes presented to the student-run free clinic seeking a refill of her diabetes medication. She had been prescribed a combination of metformin 1000 mg and sitagliptin 100 mg (Treviamet 50 mg sitagliptin + 500mg metformin HCl 2 tablets per day) by a clinician in Kenya but had discontinued the medication four days prior to the visit because she ran out of supply. She self-monitors blood glucose at home using a glucometer, with recent fasting readings ranging between 135 and 145 mg/dL while on the medication. She had not had formal laboratory testing in over two years.

During the visit, the patient endorsed experiencing diffuse musculoskeletal pain, primarily involving her knees, which she described as dull and achy with occasional sharp flares, particularly when climbing stairs. The pain had been ongoing since shortly after starting the medication and was worse in the mornings. She denied any joint swelling, redness, or warmth. She found partial relief with 30-minute daily walks and noted that increasing her water intake also seemed to help. She denied fever, rash, fatigue, or other systemic symptoms and had not taken any over-the-counter pain medications.

On the physical exam, she was well-appearing with stable vital signs. Musculoskeletal exam was notable for mild tenderness to palpation over the right knee without effusion, erythema, or limitation of movement. No synovitis or deformities were noted in other joints.

Given the chronicity of symptoms and their onset shortly after initiating sitagliptin, DPP-4 inhibitor-induced arthralgia was suspected. The medication was discontinued, and she was transitioned to metformin monotherapy at 500 mg twice daily. She was advised to continue her exercise routine and consider using acetaminophen or naproxen for symptom control. A referral was placed to a local access clinic for diabetes management, including A1c testing, urine microalbumin, ophthalmology screening, and imaging if pain persisted. On follow-up with the patient one month after discontinuation of sitagliptin, she reported complete resolution of her musculoskeletal pain likely confirming a diagnosis of DPP-4 inhibitor-induced arthralgias.

Discussion: Even though uncommon, the differential diagnosis for musculoskeletal pain in patients with diabetes should consider medication side effects. This case demonstrates the non-specific potential presentation of DPP-4 inhibitor-induced arthralgias. Diagnosing this adverse effect requires determining the correlation between medication use and symptom onset, along with maintaining a high index of suspicion. In patients with diabetes using DPP-4 inhibitors who present with otherwise unexplained diffuse non-inflammatory joint pain, a trial discontinuation of the medication may be a reasonable next step in evaluation.

5) A CHALLENGING CASE OF PSORIASIS: PSORIATIC LESIONS PRESENTING UNDER THE GUISE OF SYPHILIS

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Introduction: Psoriasis vulgaris is an inflammatory skin disease. Comparatively, secondary syphilis is a sequela of untreated or undertreated Treponema pallidum. As both can present with similar skin findings, there is diagnostic difficulty in differentiating these two diseases.

Case Presentation: We discuss a 31-year-old man with complaints of 1 month of rash on the palms, arms, legs, and buttocks and left ear tinnitus. On physical exam and initial laboratory testing, secondary syphilis was suspected via indicative skin findings and weakly positive RPR, however histopathology revealed definitive psoriasis.

Discussion: Characteristic findings for psoriasis include plaque and less commonly circular lesions. Key histopathological findings include hypogranulosis, club shaped rete ridges, dilated dermal papillae vessels, and Munro microabscesses. Treatment of psoriasis is based on severity of disease, ranging from topical treatments to systematic care.

Conclusion: Psoriasis and secondary syphilis can be challenging to differentiate via physical exam alone and often necessitate histopathological investigation for proper diagnosis and patient care.

6) INTRANASAL COCAINE AND ENDOPHTHALMITIS

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Endogenous fungal endophthalmitis (EFE) is a severe intraocular infection typically due to hematogenous spread of fungi. Clinically, EFE presents with decreased visual acuity, eye pain, and signs of intraocular inflammation. It is an ophthalmic emergency and can lead to blindness.

A 40-year-old male with no significant past medical or ocular history presented to the emergency department with eight days of decreased vision, floaters and photophobia with minimal pain in his left eye. A broad review of systems was notable for intermittent fevers and night sweats, recent travel to Mexico, and one year of low back pain. He denied any history of IV drug use, but endorsed intranasal cocaine use most recently 2-3 weeks prior to presentation. Examination revealed visual acuity (VA) of 20/20 in the right eye and 20/400 in the left eye. Slit lamp examination of the left eye was notable for 1+ diffuse non-blanching injection of conjunctiva and sclera, scattered fine keratic precipitates, 4+ cell with <1mm hypopyon, and 4+ anterior vitreous cell. Significant media opacity limited the fundus examination but was notable for clumps of vitreous opacities in the inferior posterior vitreous cavity. Initial work up included comprehensive testing for infectious, autoimmune, and immunodeficiency-related etiologies, all of which were negative or within normal limits. The patient was started on topical difluprednate and was prophylactically treated for acute retinal necrosis and toxoplasmosis with valacyclovir and sulfamethoxazole/trimethoprim. The next day, his vision had worsened to count fingers (CF) in the left eye. Slit lamp examination was stable, and fundus examination now showed vitreous opacities in a "string of pearls" configuration. Due to the concern for possible endogenous endophthalmitis, the patient underwent diagnostic vitrectomy with vitreous biopsy and injection of intravitreal vancomycin, ceftazidime, and voriconazole. The vitreous sample was sent for aerobic and fungal culture, viral and toxoplasmosis polymerase chain reaction (PCR), and cell cytology with flow cytometry. Gram-stain showed 2+ PMNs, culture showed no growth, and all other tests were negative. At post-operative day #16, he reported worsening pain and drainage from his left eye. Given worsening pain and anterior chamber inflammation, the patient received an additional dose of intravitreal voriconazole. They were urgently referred to the infectious disease service for systemic evaluation for fungemia which was unremarkable. The patient was started on oral fluconazole for empiric treatment of fungal endophthalmitis. After starting fluconazole, the patient reported resolution of pain and the size of the chorioretinal lesions decreased. At 11-month follow-up, VA was 20/20 and exam showed resolution of chorioretinal lesions with no sign of intraocular inflammation.

Patients at risk for developing fungemia and endophthalmitis are typically immunocompromised or exposed to intravenous pathogens from invasive procedures. IVDU is also a known risk factor if drug samples are contaminated by fungal pathogens. Our patient did not have any of these known risk factors. This case highlights the value of a complete medical and social history from patients in the setting of suspected endophthalmitis, as routes of illicit drug use such as intranasal inhalation may lead to EFE in immunocompetent patients.

7) EYE OF THE STORM: NECROTIZING SCLERITIS AS THE FIRST SIGN OF ANCA-ASSOCIATED VASCULITIS

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Introduction: Necrotizing scleritis is a rare but severe form of scleritis characterized by progressive scleral inflammation, ischemia, and tissue necrosis. It is the most destructive form of scleritis and is often associated with significant ocular morbidity, including corneal melting, perforation, and vision loss. The condition is commonly linked to systemic autoimmune diseases, particularly ANCA-associated vasculitis (AAV), rheumatoid arthritis, and other connective tissue disorders. This case highlights a unique presentation of necrotizing scleritis as the initial manifestation of undifferentiated AAV, emphasizing the importance of a thorough systemic evaluation in patients with atypical/refractory scleritis.

Case Presentation: A 55-year-old female with a past medical history of hypertension, osteoarthritis was admitted for a right breast wound, presumed to be due to an occupational chemical burn. She saw her primary care provider post-hospitalization, and was diagnosed with acute bacterial conjunctivitis and prescribed polymyxin B-trimethoprim ophthalmic solution.

She returned for a follow-up visit with worsening eye pain and vision changes. A slit-lamp examination revealed a central corneal ulcer, prompting an urgent referral to optometry and ophthalmology. The optometrist initially suspected vitamin A deficiency due to low vitamin A levels, and supplementation was initiated. As her symptoms failed to improve, she was seen by ophthalmology a month later. Ophthalmology raised concerns for inflammatory necrotizing scleritis, due to its subacute onset and progressive nature. Given her severity, she was urgently admitted for further workup and treatment.

During her admission, she was diagnosed with left inferotemporal necrotizing scleritis with significant perilimbal thinning. Rheumatology and hepatology were consulted due to suspected autoimmune involvement. Key findings included significant weight loss (12.4% past three months), positive rheumatoid factor (RF), positive ANA with low titers of antichromatin and ribosomal P antibodies, transaminitis, splenomegaly, thrombocytopenia, and positive anti-MPO antibodies. An extensive infectious workup, including syphilis (TPPA/RPR nonreactive) and unremarkable tuberculosis screening (QuantiFERON-TB negative, chest X-ray normal).

Given her presentation and serologic findings, rheumatology classified her condition as an undifferentiated ANCA-associated vasculitis (AAV) with necrotizing scleritis as the initial manifestation. She was started on high-dose intravenous corticosteroids with plans for long-term immunosuppressive therapy. She saw rheumatology two weeks later, but no clear trigger was identified, though medication exposure was considered a plausible factor. Microscopic polyangiitis (MPA) was favored over granulomatosis with polyangiitis (GPA) due to the absence of upper respiratory symptoms and a normal PR3 level. Rituximab and continued steroid was recommended, which she had a good response to.

Discussion: The patient's progressive ocular symptoms, despite initial treatment for presumed bacterial conjunctivitis and vitamin A deficiency, necessitated further rheumatologic and ophthalmologic evaluation. Her positive anti-MPO antibodies and RF, in conjunction with systemic findings such as weight loss, transaminitis, splenomegaly, and thrombocytopenia, strongly suggested an underlying autoimmune etiology.

AAV, particularly MPA, is associated with anti-MPO positivity and systemic vasculitis manifestations. While GPA more frequently involves the upper respiratory tract, MPA often presents with renal and pulmonary involvement. This patient's presentation was atypical, as necrotizing scleritis was the primary and initial manifestation, underscoring the need for a high index of suspicion when evaluating progressive ocular inflammation.

8) DIET-INDUCED OXALATE NEPHROPATHY CAUSING ACUTE RENAL FAILURE: A CAUTIONARY CASE OF PLANT-BASED PROTEIN EXCESS

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Introduction: Oxalate nephropathy (ON) is caused by calcium oxalate deposition in the renal tubules, resulting in inflammation and injury to the renal parenchyma. It is associated with a poor prognosis, marked by high morbidity and mortality, making early detection critical. While ON is commonly linked to genetic disorders and enteric hyperoxaluria due to fat malabsorption, growing evidence highlights the role of diet in contributing to secondary hyperoxaluria and subsequent renal injury. With the widespread popularity of high-protein diets for weight loss, better glycemic control, and improved metabolism, clinicians must consider the dietary risks and benefits, particularly in patients with pre-existing kidney disease. We present a case of acute renal failure requiring hemodialysis due to biopsy-proven ON in a patient following a high-protein, low-carbohydrate diet with daily high almond consumption.

Case Presentation: A 72-year-old female with a history of chronic kidney disease stage 3 and type 2 diabetes mellitus was referred from an outpatient clinic for evaluation of acute kidney injury (AKI) following an increase in serum creatinine from a baseline of 1.2 mg/dl to 4.43 mg/dL over one month, with an eGFR of 13 mL/min/1.73 m2.

In the ED, she reported good appetite and adequate hydration and denied use of NSAIDs, supplements, or new medications. Labs revealed worsening AKI with a serum creatinine of 5.8 mg/dL. Urinalysis showed bland sediment without casts or dysmorphic red blood cells. Autoimmune and infectious workups were negative without evidence of paraproteinemia. The urine protein-to-creatinine ratio was 0.40. Renal ultrasound showed no evidence of obstruction. Hemodialysis was initiated on hospital day four due to worsening metabolic acidosis and a peak creatinine of 11.06 mg/dL with a GFR of 3 mg/dL.

Renal biopsy on hospital day six revealed oxalate nephropathy with acute tubular injury, 38% focal global glomerular sclerosis, and moderate interstitial fibrosis. Upon further discussion, the patient disclosed consuming 28 almonds daily for the past month as part of her high-protein, low-carbohydrate diet for glycemic control. Almonds were her choice of protein source. She was discharged with a plan for long-term outpatient hemodialysis.

Discussion: Our case highlights the importance of individualized dietary recommendations for patients with pre-existing kidney disease and serves as a cautionary example for clinicians managing individuals on fad diets. Although nuts are a common protein source, they are also oxalate-rich; excessive intake can lead to hyperoxaluria, precipitating ON and irreversible renal damage. Thus, in individuals with reduced renal reserve, such dietary choices can trigger rapid progression to ESKD. While high-protein diets are often promoted for various health benefits, they may contribute to glomerular hyperfiltration and accelerate renal decline. The delayed diagnosis of ON in this case, despite worsening kidney function and early dialysis initiation, underscores the need for prompt evaluation of dietary factors in unexplained AKI. Greater awareness of diet-related nephrotoxicity is essential to prevent avoidable renal injury.

9) A DIAGNOSTIC DILEMMA: ANAPLASMOSIS-INDUCED LUPUS FLARE MIMICKING HEMOPHAGOCYTIC LYMPHOHISTIOCYTOSIS

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Introduction: Tick borne illnesses can present significant diagnostic challenges in immunocompromised hosts. Anaplasma phagocytophilum infection, while often self-limited, may cause severe systemic illness in patients with conditions such as systemic lupus erythematosus (SLE) and asplenia. In this population, infection can mimic or precipitate autoimmune flares and may resemble other hyperinflammatory syndromes, including hemophagocytic lymphohistiocytosis (HLH).

Case Presentation: A 40-year-old woman with known SLE, immune thrombocytopenia post-splenectomy, and Raynaud's phenomenon presented with fever, arthralgia, and diarrhea following a tick bite. She was found to have acute hypoxic respiratory failure and rising creatinine, with confirmatory testing positive for Anaplasma phagocytophilum. Despite improvement on doxycycline, her renal function worsened and ferritin exceeded 10,000 ng/mL. Due to concern for HLH, she was empirically treated with intravenous steroids and transferred for further evaluation. While hyperferritinemia and fever were present, she did not meet HLH-2004 diagnostic criteria. Renal biopsy revealed class V membranous lupus nephritis with superimposed tubular injury, suggesting a lupus flare triggered by anaplasmosis. Immunosuppressive therapy was initiated after infection control, leading to clinical and biochemical improvement.

Discussion: This case illustrates the difficulty of distinguishing between infection, autoimmune flare, and HLH in immunocompromised patients. In SLE, overlapping features such as fever, cytopenias, transaminitis, and elevated ferritin can obscure the diagnosis. Although HLH is life-threatening and must be considered, extreme hyperferritinemia alone lacks specificity in adults and may also reflect severe infection or autoimmune activity. Early renal biopsy was critical in identifying lupus nephritis as the true driver of disease and avoiding inappropriate escalation of HLH-directed therapy. The presence of asplenia likely contributed to the severity of infection and underscores the vulnerability of this population. Prompt recognition of lupus flare allowed for timely initiation of immunosuppression, once infection was adequately addressed. Multidisciplinary collaboration and attention to evolving clinical and laboratory data were central to the favorable outcome.

Conclusion: In patients with SLE and immunocompromising conditions, infections may precipitate flares that resemble other inflammatory syndromes such as HLH. Clinicians must remain vigilant to these overlapping presentations. This case highlights the value of tissue diagnosis and a stepwise approach to immunosuppression to guide appropriate management and prevent misdiagnosis in complex, high-risk settings.

10) CLINICAL CHARACTERISTICS AND REPORTED CASES OF VEXAS SYNDROME IN THE UNITED STATES: A SCOPING REVIEW

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Background: VEXAS (vacuoles, E1 enzyme, X-linked, autoinflammatory, somatic) syndrome is an adult-onset disorder caused by somatic mutations in the UBA1 gene. It primarily affects older men and is characterized by systemic inflammation and hematologic abnormalities. Despite growing interest in VEXAS, the literature remains limited to case reports and small series, with no comprehensive synthesis of U.S. cases to date. This scoping review addresses this gap by describing the clinical features, diagnostic pathways, treatment outcomes, and management strategies in U.S. patients, offering key insights for clinicians.

Methods: We searched PubMed, Web of Science, and CINAHL through April 2025 to identify case reports and series of U.S. patients diagnosed with VEXAS syndrome. Articles were eligible if they reported a UBA1 mutation consistent with VEXAS syndrome and included sufficient clinical detail for data extraction. Non-U.S. cases, reviews, commentaries, and abstracts without full reports were excluded.

Results: Of 194 citations screened, 105 underwent full-text review, and 31 articles met inclusion criteria, describing 43 unique male patients. The median reported age at diagnosis was 66 years. The p.Met41Leu variant was identified in 25/43 patients (58%), making it the most common UBA1 mutation. Macrocytic anemia was reported in 41/43 patients (95%), and bone marrow vacuolization in all cases. Cutaneous findings were noted in 38/43 patients (88%), including Sweet syndrome or neutrophilic dermatoses in 18/43 (42%) and histiocytoid variants in 5 cases. These were often misclassified as lupus or vasculitis, causing diagnostic delays of 1-3 years. Other features included fever, chondritis, and inflammatory arthritis. Myelodysplastic syndrome was diagnosed in about half of patients. All patients were treated with corticosteroids, and among the 31 with tapering data, 24/31 (77%) experienced symptom flares when prednisone was reduced below 20-30 mg daily. Immunosuppressants and biologics showed limited benefit.

Conclusions: U.S. cases of VEXAS syndrome consistently reveal a pattern of relapsing inflammation, diagnostic delays, and prolonged corticosteroid use, underscoring the need for more effective treatments and earlier diagnosis. Most steroid-sparing agents provided limited benefit, though some targeted therapies showed improvement in selected patients. Earlier recognition may be supported by awareness of hallmark features like cutaneous inflammation, macrocytic anemia, and cytopenias in older males, leading to timely diagnoses and better outcomes. Genetic testing for UBA1 mutations should be considered for early diagnosis and to guide targeted therapies.

11) A BONE BUFFET: HUNGRY BONE SYNDROME AFTER PARATHYROIDECTOMY IN END STAGE RENAL DISEASE

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Background: Hungry bone syndrome (HBS) is a common complication following parathyroidectomy resulting in severe prolonged hypocalcemia. Incidence rates are dependent on type and indication of the parathyroidectomy. One indication is in patients with end stage renal disease (ESRD) who develop secondary hyperparathyroidism (SHPT) due to defective renal activation of vitamin D resulting in increased parathyroid hormone (PTH). Despite HBS being a common complication, there is currently no standard definition or treatment guidelines.

Clinical Vignette: A 26-year-old male with past medical history of ESRD due to Immunoglobulin A (IgA) nephropathy and recent subtotal parathyroidectomy presented to the emergency department (ED) with weakness, vomiting, and perioral paresthesia. Initial work-up revealed significant hypocalcemia and hyperkalemia with peaked T-waves on electrocardiogram (ECG). The patient was diagnosed with HBS and treated for electrolyte derangements per protocol in addition to hemodialysis with calcium-containing dialysate. Following intervention, symptoms improved despite persistent hypocalcemia. The patient was discharged on a long-term regimen of calcitriol and calcium carbonate.

Discussion: Our patient's clinical course of HBS following subtotal parathyroidectomy is common amongst the post-parathyroidectomy patient population. However, despite this being a known complication, the pathophysiology of its development is not well understood. Current literature describes potential risk factors for HBS in ESRD patients including younger age, obesity, higher pre-surgical PTH, and alkaline phosphatase, yet how these factors contribute to HBS is not characterized. This case demonstrates the importance in improving clinician awareness of HBS risk factors and the development of standardized treatment guidelines to aid in early identification and treatment of patients at greatest risk for HBS.

12) CUTANEOUS CROHN'S DISEASE FOLLOWING SECUKINUMAB THERAPY: A RARE MANIFESTATION OF AN UNCOMMON ADVERSE EFFECT

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Introduction: Hidradenitis suppurativa (HS) is a chronic inflammatory condition characterized by painful nodules, abscesses, or tunnels beneath the skin, predominantly within intertriginous regions. HS results from follicular occlusion and dilation, leading to inflammation and bacterial colonization. Follicular rupture disseminates infection, resulting in sinus tract formation. This condition significantly impacts patient quality of life due to pain, scarring, discharge, and odor. Severe HS is particularly challenging to manage, frequently relapsing despite treatment.[1]

Secukinumab, a biologic medication targeting interleukin-17A (IL-17A), an immune mediator, was FDA-approved for HS treatment in 2023.[2] Though generally safe, secukinumab use is associated with rare occurrences of new-onset or exacerbation of inflammatory bowel disease (IBD), likely related to impaired intestinal epithelial integrity from IL-17 inhibition.[3,4]

Reports of cutaneous Crohn's disease, an uncommon extraintestinal manifestation of Crohn's disease presenting with granulomatous skin lesions, following secukinumab therapy, are limited.[5]

We describe a patient with severe HS who developed cutaneous Crohn's disease following secukinumab therapy, underscoring challenges in managing overlapping autoinflammatory conditions and potential risks associated with IL-17 inhibition.

Case Presentation: A 56-year-old male with hypertension, diabetes, and tobacco use presented in 2019 with painful boils on the buttocks and scrotal cellulitis of one-year duration. He had no prior similar lesions. Dermatological evaluation confirmed HS, classified as Hurley Stage III, HS-PGA 3.

Prior treatments with minimal benefit included phototherapy, adalimumab for two years, and numerous antibiotics (oral clindamycin, doxycycline, minocycline, trimethoprim-sulfamethoxazole, ciprofloxacin, topical clindamycin, and clobetasol ointment). Augmentin provided partial relief but was stopped due to gastrointestinal intolerance. Plastic surgery consultation considered but deferred surgical management.

In 2022, infliximab therapy was initiated but discontinued in mid-2023 due to persistent disease activity. Subsequently, secukinumab 300 mg subcutaneously weekly for four weeks, then biweekly, was commenced. Six months later, the patient experienced disease progression with large, knife-like ulcers in inguinal folds and the gluteal cleft. Colonoscopy confirmed cutaneous Crohn's disease.

Secukinumab was discontinued, and golimumab 2 mg/kg every four weeks was initiated, resulting in sustained improvement for over one year. Rinvoq was considered but not pursued, favoring continued golimumab with adjunctive doxycycline and topical clobetasol.

Discussion: Secukinumab targets IL-17A, a cytokine critical to gut mucosal integrity. Its inhibition may compromise epithelial barriers, promoting new-onset or exacerbation of IBD.[3,4] Clinical trials and observational data document rare but significant instances of IBD following secukinumab initiation, emphasizing caution in patients with underlying gastrointestinal risks.[6,7]

Cutaneous Crohn's disease, characterized by granulomatous skin lesions, is rare and typically associated with underlying bowel inflammation. The overlap between HS and Crohn's disease complicates therapeutic strategies, particularly as medications beneficial for one condition may exacerbate another.[5] TNF-alpha inhibitors such as golimumab effectively manage both HS and Crohn's disease, presenting a suitable therapeutic option for overlapping inflammatory conditions. [8,9]

Clinicians should rigorously screen patients for gastrointestinal symptoms or new skin lesions during secukinumab therapy. Close multidisciplinary collaboration between dermatology and gastroenterology ensures prompt diagnosis and optimal management.

Conclusion: Secukinumab-induced cutaneous Crohn's disease, while rare, poses significant clinical challenges. Vigilant screening and monitoring are vital when using IL-17 inhibitors in patients with HS. TNF-alpha inhibitors represent a preferred therapeutic strategy in managing concurrent autoinflammatory conditions such as HS and Crohn's disease.

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13) UNMASKING SIADH: A CASE OF PERSISTENT HYPONATREMIA IN A PATIENT WITH LUNG MASS AND MALNUTRITION

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Introduction: In older patients, hyponatremia is a common laboratory abnormality. This can be a result of prescription of drugs associated with hyponatremia (thiazides and antidepressants), poor nutritional intake ("tea and toast" diet), syndrome of inappropriate antidiuretic hormone secretion (SIADH), or endocrinopathies. It can be especially difficult to distinguish the etiology of hyponatremia in this population as it is often multifactorial. Identifying the cause is important in determining proper treatment, to avoid putting this population at risk for symptoms like cognitive impairment, gait abnormalities, and falls.

Case Presentation: An 80-year-old woman with no significant past medical history, was evaluated for chronic hyponatremia, first noted 20 years ago. Serum sodium had been stable around 132 mmol/L but recently declined to 128 mmol/L. She reported new difficulty with attention, morning nausea and a recent fall, along with progressive weight loss from 127 lbs to 102 lbs. Dietary history suggested low protein and solute intake.

Lab work ruled out hypothyroidism, autoimmune diseases, pseudohyponatremia, and hyperglycemia. Urine studies (osmolality 382 mOsm/kg, sodium 62 mmol/L) and clinical euvolemia supported a diagnosis of SIADH, likely with some contribution from low solute intake (positive urine ketones, poor nutritional history). She had a known history of pulmonary nodules and Mycobacterium avium complex (MAC) infection diagnosed via sputum culture in 2019, with biopsy negative for malignancy. SIADH is suspected to be secondary to MAC, though low solute intake likely contributed.

She was advised to increase protein intake, and bexagliflozin was considered if dietary changes are not made to correct sodium. She elected not to treat MAC at this time but is following with infectious disease and will reassess later.

Discussion: It is important to do a thorough workup in elderly patients with hyponatremia to avoid missing treatable causes and prevent symptomatic presentation. Symptoms, even in mild hyponatremia, can be triggered by new problems like trauma, infection, or malnutrition, which may obscure the true diagnosis. Thus, it is important to follow these patients closely to assess for changes in presentation. Although SIADH is commonly associated with lung carcinoma, it can also be caused by other lung pathologies, like MAC.

14) AN UNUSUAL CASE OF MPO+ ANCA-ASSOCIATED VASCULITIS

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Introduction: ANCA-Associated Vasculitis (AAV) is a rare phenomenon whose pathophysiology is poorly understood. The disease process is systemic, notably affecting the kidneys and lungs by way of immune complex deposition. This often presents as edema, shortness of breath, rising BUN and creatinine levels, and positive ANCA titers. In the acute setting, patients can require immunosuppression, glucocorticoids, or urgent hemodialysis but are generally expected to achieve remission in their clinical course. Limitation of morbidity and mortality is likely dependent on swift recognition of AAV and cessation of the offending agent. Hydralazine is a known agent associated with AAV, and its wide use in the treatment of hypertension warrants the need for further understanding of the pathophysiology of hydralazine-induced AAV and its treatment. Furthermore, the true prevalence of AAV may be higher than reported due to being underrecognized and potentially under reported. Here we present a case of hydralazine-induced AAV.

Case: A 76-year-old Eastern European woman with a history of CKD and hypertension controlled by furosemide and hydralazine presented with pain and swelling of the tongue and face concerning for infection. The patient was admitted to the ICU, where she remained hypertensive but hemodynamically stable. On daily labs, she was found to have a creatinine of 5.5, elevated from her baseline of 2 a few weeks prior. After ultrasound ruling out obstructive renal pathology, further chart review revealed patient had been lost to follow-up several months prior after workup for microscopic hematuria, proteinuria, and elevated creatinine that showed positive ANA, MPO antibodies, and high p-ANCA titers. Patient then underwent renal biopsy that showed p-ANCA+ MPO+ PR3- pauci-immune glomerulonephritis. CT chest revealed centrilobular tree-in-bud ground glass nodularity in the lungs. Anti-histone antibodies were positive, suggesting drug-induced vasculitis. Hydralazine was discontinued, IV steroids were started, and Rituximab infusions were initiated. The patient's creatinine decreased to near baseline level, and she was discharged in stable condition.

Discussion: Hydralazine-induced ANCA-associated vasculitis (AAV) is rare but clinically severe, associated with high anti-MPO antibodies and worse renal outcomes. Compared to previous literature, our patient matches duration and presentation despite being on a significantly lower dose of hydralazine. Following the discontinuation of hydralazine, her renal function improved, highlighting the importance of early drug cessation. Persistent ANCA levels following hydralazine cessation often warrants immunosuppression, but treatment should be tailored based on patient's clinical presentation due to the risk of infection-related mortality in this population. Given its severity and potentially underrecognized and underreported nature, clinicians should consider hydralazine-induced AAV in patients with unexplained renal decline.

15) NAVIGATING THE STORM: A CASE OF SECONDARY HEMOPHAGOCYTIC LYMPHOHISTIOCYTOSIS IN A YOUNG ADULT WITH CHRONIC GRANULOMATOUS DISEASE

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Chronic Granulomatous Disease (CGD) is an inherited immunodeficiency disorder characterized by a defect in the nicotinamide adenine dinucleotide phosphate (NADPH) oxidase complex, leading to impaired respiratory burst, frequent infections and immune dysregulation. These individuals are at an increased risk of developing secondary hemophagocytic lymphohistiocytosis (HLH), a life-threatening syndrome of systemic hyperinflammation. HLH is triggered by excessive cytokine secretion due to reduced natural killer cells and cytotoxic T cells, causing widespread cell injury, multi-organ failure, and death. The clinical manifestations and laboratory findings of secondary HLH can overlap with severe infections, making early recognition and diagnosis a challenge. Despite aggressive treatment, mortality remains high among adults, highlighting the critical importance of prompt diagnosis and intervention. This is particularly important for internists to recognize, as improved awareness and advances in CGD management have significantly improved life expectancy, with many patients living into their 40's.

A 21-year-old male with a history of CGD, aspergillosis, and liver abscess presented with a two-week history of fevers, cough, and sore throat. He had been non-compliant with interferon infusions and prophylactic Bactrim and itraconazole the past three months. The patient was found to be in septic shock secondary to Burkholderia cepacia bacteremia and pneumonia, along with multi-organ failure. On admission, the patient was promptly started on appropriate antibiotics. Despite three days of treatment, his fever persisted. Laboratory findings began to emerge, including bicytopenia, hypertriglyceridemia, hypofibrinogenemia, and hyperferritinemia. A presumptive diagnosis of HLH secondary to B. cepacia bacteremia was suspected after meeting four of seven HLH-2024 criteria. Subsequent lab results revealed elevated soluble CD25/IL-2 levels. H-score of 233 (98-99% HLH probability) was also calculated. Treatment was initiated with daily dexamethasone 20mg and two rounds of IVIG (1g/kg) alongside antimicrobial therapy. Initial clinical and laboratory improvements were observed, however reoccurrence of persistent fevers one week later raised concerns for relapse of Burkholderia bacteremia and worsening HLH.

This case highlights the importance of prompt recognition and diagnosis of secondary HLH in adult CGD patients, particularly in the setting of severe infections like Burkholderia bacteremia. The association of CGD and Burkholderia infection is well established, but few cases have described the concurrent occurrence of HLH in adult CGD patients with Burkholderia infection. The overlap in clinical presentations of hyperinflammation, immunodeficiency, and sepsis makes secondary HLH challenging to diagnose. As life expectancy of CGD patients has improved, clinicians must remain vigilant in recognizing secondary HLH among these patients, especially when signs of systemic inflammation or rapid clinical deterioration are present. Our patient eventually met six of the seven 2024-HLH criteria, including fever, splenomegaly, bicytopenia, hypertriglyceridemia, hypofibrinogenemia, hyperferritinemia, and elevated IL2-receptor levels. Hemophagocytosis was not confirmed due to the patient's poor clinical stability and strong clinical suspicion for HLH, which responded to treatment. Early treatment with steroids, IVIG, and antimicrobials/fungals to treat underlying infection has been shown to improve outcomes in these complex cases. A high index of clinical suspicion, timely diagnosis, and prompt initiation of appropriate therapies can significantly improve clinical outcomes and reduce mortality in these critically ill patients.

16) OZEMPIC GOES VIRAL: WHAT ARE PATIENTS REALLY LEARNING FROM YOUTUBE?

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Background: The widespread availability of health-related content makes it difficult for patients and the public to identify credible sources. With the rise of social media and platforms like YouTube, patients risk encountering incorrect or incomplete information. Misinformation can create misconceptions about disease prevention and treatment. Health content must be reliable and evidence-based, as it impacts decision-making and treatment adherence.

One medication class gaining significant online attention is glucagon-like peptide-1 (GLP-1) receptor agonists. These drugs manage type 2 diabetes and, more recently, obesity. As more physicians prescribe these medications and they are being increasingly discussed in the public, there is greater potential for circulation of misleading information regarding their benefits and risks. Given YouTube's accessibility and popularity, it is essential to assess the validity of medical information available to patients on this platform.

The DISCERN tool has been validated for its reliability and assesses the quality and validity of medical content, specifically focusing on treatment choices. It has been used to assess the quality of consumer health information, including for chronic pain and inflammatory bowel disease. Applying the DISCERN tool to assess YouTube videos on GLP-1 agonists will provide insight into the quality of information available to both physicians and patients.

Methods: A comprehensive YouTube search was conducted using three relevant queries. The first 25 videos from each query, sorted by relevance, were recorded. Video reliability and accuracy were assessed using the DISCERN scoring system. Quantitative data including video length, views, likes, days since upload, and source of upload were also documented. Statistical analyses were performed to analyze subgroup differences and correlations.

Results: A total of 60 videos were analyzed, with the mean DISCERN score being 56.9 (SD = 10.4). There was a statistically significant difference in DISCERN scores by uploader type ($\chi^2 = 16.2$, df= 4, $p = 0.0027$). Videos uploaded by educational sources had a mean score of 62.7 (SD = 11.9) and those uploaded by physicians or advanced practice providers had a mean score of 62.1 (SD = 6.8). Videos from companies scored significantly lower, with a mean of 44.3 (SD = 9.1). Videos containing diagrams had significantly higher DISCERN scores than those without ($p < 0.001$). No significant correlation was found between DISCERN scores and views ($\rho = -0.11$, $p = 0.42$), likes ($0 = 0.77$), or comments ($p = 0.53$). Physician/APP uploaders were not associated with significantly higher DISCERN scores compared to non-provider uploaders ($p = 0.99$).

Conclusion: GLP-1 receptor agonist videos on YouTube vary in information accuracy and quality. Videos by educational sources and physicians scored higher, whereas companies and news outlets scored lower on the DISCERN scale. Diagrams were strongly associated with more reliable content, suggesting that visual aids might improve the quality of health information. Metrics such as views, likes, and comments did not show meaningful relationships with scores, indicating popularity does not reflect the credibility of social media content related to health. As GLP-1 agonists continue to gain attention, ensuring the accuracy of health content remains critical.

17) CHANGES IN INSURANCE-BASED DISPARITIES IN ADULT INFLUENZA VACCINATION RATES BEFORE AND AFTER THE COVID-19 PANDEMIC

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Background: As influenza remains a public health concern in the United States, annual vaccination is a critical component of preventative care, especially among older adults and other high-risk groups.

Health insurance plays a major role in vaccine access. Individuals without insurance or who rely on public coverage such as Medicaid may face greater logistical and financial barriers to vaccination. The COVID-19 pandemic disrupted access to routine healthcare and may have exacerbated existing gaps in access to preventive services. Previous studies have shown that there are disparities in flu vaccination rates, but less is known about how these gaps have changed since the pandemic.

We used nationally representative data from the 2019 and 2023 National Health Interview Survey (NHIS) to evaluate trends in annual influenza vaccine uptake across insurance categories.

Methods: We analyzed pooled data from the 2019 and 2023 National Health Interview Survey (NHIS), including adults ≥18 years with valid flu shot responses. Insurance was classified as private, public, or uninsured. Public insurance included Medicare, Medicaid, Children's Health Insurance Program (CHIP), state-sponsored plans, and other government coverage. All analyses accounted for the complex survey design. We estimated vaccination rates by insurance and sociodemographic factors, while utilizing adjusted models to evaluate temporal changes between insurance groups.

Results: Analysis of pooled data from 2019 and 2023 showed a modest but statistically significant increase in overall vaccination rates for influenza among U.S. adults (mean difference: +1.12 percentage points; 95% Cl: 0.10%, 2.14%; p = 0.0308). The odds of receiving a flu shot in 2023 were ~5% higher than in 2019 (OR = 1.05; 95% CI: 1.00-1.09. Private (p = 0.63), public (p = 0.69), and uninsured (p = 0.30) groups showed no statistically significant change over time. In both years, publicly insured adults had higher odds of receiving a flu shot than individuals using private insurance (OR = 1.23 in 2019; 1.20 in 2023), while uninsured adults had even lower odds (OR = 0.43 in 2019; 0.46 in 2023).

Discussion: In this nationally representative analysis of U.S. adults, influenza vaccination rates increased slightly between 2019 and 2023, but this trend did not translate into meaningful changes within individual insurance types. These findings demonstrate the need for continued efforts to address barriers to preventive care.

18) 40 YEARS WITHOUT A DOCTOR: A COMPLEX PRESENTATION OF INFECTIVE ENDOCARDITIS

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Introduction: Infective endocarditis (IE) is a life-threatening condition that often presents with vague symptoms and requires a high index of suspicion for timely diagnosis. Identifying the underlying source of infection is critical for effective treatment and surgical planning. This case illustrates an atypical presentation of Streptococcus gordonii endocarditis in a patient without prior medical history, highlighting the diagnostic complexity and emphasizing the importance of appropriate, cost-effective imaging in determining the source of bacteremia.

Case Presentation: A 63-year-old man with no known medical history presented to the emergency room with fevers, fatigue, and weight loss. He had not seen a physician in 40 years but recently underwent transthoracic echocardiogram for pre-colonoscopy clearance during routine re-establishment of care, which revealed severe mitral regurgitation with possible vegetation. On admission, he had a new murmur, bilateral lower extremity petechiae, and pre-tibial edema. Due to concern for IE without source localization, and in the absence of intravenous drug use, implanted hardware, or recent dental procedures, he underwent extensive infectious and rheumatologic workup. Subsequent labs demonstrated low complement levels, elevated creatinine, and 3/3 blood cultures growing Streptococcus gordonii, a typical oral flora organism. Oral exam revealed poor dentition without overt signs of infection, though suspicion for a dental source remained high. A CT Dentascan later revealed a periapical abscess of tooth #3, confirming the presumed source. A dental consult was placed. While the dental team initially recommended outpatient management given the subacute nature of the infection, inpatient extraction was ultimately pursued in collaboration with cardiothoracic surgery to allow for definitive source control before planned valve intervention.

Discussion: This case highlights the diagnostic challenges of IE in a patient without traditional risk factors, such as intravenous drug use, prosthetic valves, or recent dental procedures. Despite a culture-positive result for Streptococcus gordonii, clinical localization of the source was unclear, as the patient had poor dentition but no focal signs of oral infection. This prompted further workup, including a CT Dentascan that ultimately revealed a periapical abscess. While the imaging helped confirm the diagnosis, its use deviated from current guideline recommendations. The American Heart Association and Infectious Diseases Society of America advise intraoral radiographs as the first-line modality for suspected odontogenic sources in endocarditis. In this case, a full-mouth radiographic series may have provided the same diagnostic yield at a fraction of the cost and without the added contrast exposure. The initial decision to pursue advanced imaging before a dental consult or basic radiographs reflects a broader tendency toward reflexive testing rather than stepwise evaluation.

Conclusion: In patients with IE of unclear source, particularly when an oral etiology is suspected, intraoral radiographs should be the initial imaging modality in line with guideline recommendations. Reserving CT imaging for cases with inconclusive or concerning findings helps reduce cost, avoid unnecessary contrast exposure, and align care with evidence-based standards. This case also highlights how even well-intentioned decisions can deviate from best practices, reinforcing the importance of deliberate, guideline-informed diagnostic reasoning in complex clinical scenarios.

19) GETTING THE TOTAL STORY: ACUTE CHOLECYSTITIS 12 YEARS AFTER SUBTOTAL CHOLECYSTECTOMY

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Introduction: Gallstones are common and often clinically silent, however, approximately 15-25% of patients with asymptomatic gallstones will go on to develop symptoms within 15 years. Acute calculous cholecystitis is a complication of gallstones that commonly presents classically with right upper quadrant pain, fever, and leukocytosis. Confirmation of the clinical diagnosis is accomplished with labs and imaging such as right upper quadrant ultrasound or computed tomography of the abdomen and pelvis. Patients found to have acute cholecystitis who are surgical candidates should have a cholecystectomy performed as early as possible during hospitalization. Subtotal or fenestrated cholecystectomy techniques are safe alternatives to total cholecystectomy in the case of excessive inflammation not allowing for adequate visualization of essential biliary and vascular landmarks intra-operatively. We present a case of acute cholecystitis in a patient 12 years after subtotal cholecystectomy.

Case Presentation: A male in his mid-70s with hypertension, hyperlipidemia, obesity s/p Roux-en-Y gastric bypass surgery, squamous cell cancer of the tongue in situ, tobacco use disorder, chronic obstructive pulmonary disease, gastroesophageal reflux disease, and self-reported cholecystectomy presented to the emergency department with constant epigastric and right upper quadrant abdominal pain and several episodes of emesis starting the night before admission. He was afebrile and hypertensive to 187/91 on admission and labs obtained were largely unremarkable reporting a leukocyte count of 8.5 k/uL and mild elevations in lacate at 2.5 mmol/L and alkaline phosphotase at 166 U/L. CT of the abdomen and pelvis with contrast obtained at that time revealed "mild bowel wall thickening along the hepatic flexure of the colon...No convincing evidence of bowel obstruction. Postsurgical changes of Roux-en-Y gastric bypass. Colonic diverticulosis without evidence of diverticulitis..." and no mention of post-surgical changes to gallbladder anatomy or current radiological evidence of cholelithiasis or cholecystitis. An operative report from the patient's cholecystectomy in 2012 reported no complications and placement of a postsurgical drain for his gallbladder wound. On night two of the current admission, our patient became febrile and tachycardic, a rapid response wasll called, and imaging obtained revealed evidence of acute cholecystitis in gallbladder remnant and evidence of possible perforation. Interventional radiology placed a percutaneous cholecystostomy tube to decompress the remaining gallbladder and the patient was continued on empiric antibiotic treatment. His cholecystostomy tube was managed outpatient by general surgery and removed 4 months after hospitalization with resolution of symptoms.

Discussion: Although subtotal cholecystectomy is a safe alternative to total cholecystectomy in patients with difficult gallbladders, this procedure puts the patient at risk of recurrent cholelithiasis and associated complications. This case highlights the importance of thorough post-operative communication through documentation and also how a patient's reported past medical history can influence the interpretation of current data including clinical presentation and imaging. Initial management of this patient and later placement of a percutaneous cholecystostomy drain were appropriate and evidenced-based, however, several avoidable mistakes resulted in an unfavorable outcome that carries higher mortality risk and has a much longer treatment duration.

20) ARTERY AVERTED: A GUIDE TO CAROTID-SAFE HEMOSTATIC NET PLACEMENT IN RHYTIDECTOMY

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Introduction: The hemostatic net is an effective method to reduce post-Rhytidectomy hematomas. This study aims to provide anatomical data on the depth of the carotid artery and its branches along the neck to inform data-based guidelines for hemostatic net placement to decrease risk of inadvertent vessel injury.

Material and Methods: Medical records of patients who underwent rhytidectomy at an academic aesthetic surgery practice who subsequently underwent imaging of the neck within 10 years following the procedure were accessed. For each participant, bilateral common carotid, internal carotid, and external carotid arteries were analyzed at the C2-C4 vertebral levels, corresponding to angle of the mandible, hyoid bone, and thyroid cartilage respectively. The shortest distance between the wall of the vessel and the skin surface was measured, along with distance between the corresponding right and left vessels.

Results: Thirty-three patients (9.1% male) had images of sufficient quality. The average age at rhytidectomy=64.2 years and imaging=69.1 years. For the common carotid, at the C3 level, the average depth relative to the skin (CCDS) is 29 mm (15.9). At C4, CCDS=29 mm (15.9). For the internal carotid at the C2 level, the average depth relative to the skin (ICDS) is 32.9 mm (8.3). At C3, ICDS=25 mm (8.8), and at C4, ICDS=20.5 mm (5.5). For the external carotid at the C2 level, the average depth relative to the skin (ECDS) is 32.2 mm (6.4). At C3, ECDS=27 mm (8.8), and at C4, ECDS=25.6 mm (23.3). The closest artery to the skin along the neck is the internal carotid artery at the level of the thyroid cartilage (C4).

Conclusions: A thorough understanding of the course of the vascular structures in the neck underlies safe placement of hemostatic nets after facelift surgery. The anatomical data can help surgeons more confidently and safely deploy this technique while avoiding inadvertent vascular injury. Assuming the use of ⅜ circle suture needles, a 24 mm needle, which has a chord length of approximately 19 mm, may thus be safer to use than a 32 mm needle, which as a chord length of approximately 25 mm.

21) SOMATIC SYMPTOM BURDEN AND MIGRAINE SURGERY: THE PREDICTIVE POWER OF POLYALLERGY

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Introduction: Somatic symptom disorder (SSD) is associated with heightened symptom burden and poorer outcomes across medical interventions. However, SSD is often underdiagnosed, making it challenging to assess its impact on medical and surgical effectiveness. Polyallergy, or the presence of multiple non-anaphylactic allergies, has been linked to somatization and may serve as a practical proxy for SSD. Given the established association between somatization and migraine disorders, this study explores whether polyallergy can be used as a screening tool to predict outcomes following migraine surgery. Additionally, we assess the impact of mood and anxiety disorders, which frequently co-occur with SSD, on surgical effectiveness. Identifying polyallergy as a marker for SSD in preoperative evaluations could help refine patient selection and set appropriate expectations for migraine surgery outcomes.

Methods: A retrospective cohort study was conducted on patients who underwent migraine surgery by a single plastic surgeon between May 2012 and July 2017. Patient data, including psychiatric diagnoses, non-anaphylactic allergies, and surgical PROs, were collected and analyzed. Preoperative and postoperative outcomes were assessed using the Headache Impact Test-6 (HIT-6), Migraine-Specific Quality of Life Questionnaire (MSQOL), and Migraine Disability Assessment (MIDAS) scores. Subgroup analyses were performed based on a history of mood disorders, a history of anxiety disorders, and the number of non-anaphylactic allergies (0-1 vs. 2+), with the latter serving as a proxy for somatization. Percentage improvements in each metric were calculated, and Mann-Whitney U tests were used to compare outcomes between subgroups.

Results: The study included a total of 42 patients (33 females, 9 males) with a mean age of 43.5 ± 12.5 years. Significant improvements were observed in HIT6, MSQOL, and MIDAS scores across all subgroups, except patients with a history of an anxiety or mood disorder with MIDAS scores. Patients with an anxiety disorder had less improvement across all 3 measures than those without but the differences were not statistically significant. There were no differences in improvement between those with and without a history of a mood disorder. Patients with 2+ non-anaphylactic allergies experienced significantly less improvement compared to patients with 0-1 allergies in HIT-6 (11.9% vs. 56.3%, p=0.002), MSQOL (44.0% vs. 138.0%, p=0.05), and MIDAS (29.8% vs. 93.7%, p=0.018).

Conclusion: Migraine surgery significantly improved PROs as measured by HIT-6, MSQOL, and MIDAS scores. However, patients with 2+ non-anaphylactic allergies, used as a proxy for somatization experienced significantly worse postoperative improvements compared to those with fewer allergies. This suggests that a higher somatic symptom burden may negatively impact the effectiveness of migraine surgery. These findings highlight the role of SSD in surgical outcomes and emphasize the potential utility of polyallergy as a practical screening tool in patient charts to identify individuals at risk for suboptimal postoperative improvement. Recognizing somatic symptom burden preoperatively may aid in patient selection and expectation management without requiring a formal SSD diagnosis.

22) AMBULATORY BLOOD PRESSURE MONITORING IN YOUNG ADULT WOMEN WITH AND WITHOUT A HISTORY OF HYPERTENSION IN PREGNANCY

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Objective: Hypertension is a life-threatening condition that impacts women across all stages of life and is a strong risk factor for cardiovascular disease. It is particularly concerning during pregnancy, when hypertensive disorders such as chronic hypertension, preeclampsia, and gestational hypertension are major contributors to maternal and fetal mortality and morbidity. Accurate diagnosis of hypertension is imperative, yet many women with elevated blood pressure are misdiagnosed. Such inaccuracies can have detrimental impacts, especially in cases of pregnancy as it directly influences medical management, delivery plan, and treatment decisions. The purpose of this study was to assess the 24-hour ambulatory blood pressure monitoring (AMBP) results of women from the MyHEART trial who had a presumed clinical diagnosis of chronic hypertension and determine the incidence of masked, white coat, nocturnal or confirmed hypertension. We further analyzed the same AMBP results in women with a self-reported pregnancy history and determined the incidence of masked, white coat, nocturnal or confirmed hypertension. Lastly, we assessed the impact of having a prior pregnancy, further defined by normotensive vs. hypertensive pregnancy, on the AMBP results.

Study Design: We conducted a secondary analysis of the data from 221 females who presented for consideration to participate in the MyHEART trial where AMBP testing was conducted as part of the screening visit. All females, regardless of whether or not they enrolled, were interviewed via phone about their history of pregnancy, hypertension disorders of pregnancy, and antihypertensive medication use. Statistical analysis was performed using R-software and included using Mann-Whitney-Wilcoxon and chi-square tests.

Results: Amongst the overall cohort 221 women, 142 (64.3%) had confirmed chronic hypertension - 73 (33.0%) had white coat hypertension, 56 (25.3%) had nocturnal hypertension, and 44 (20.0%) had masked hypertension. The incidence of confirmed chronic, white coat, masked, or nocturnal hypertension in the 55 women with a history pregnancy did not differ significantly from the women without a history of pregnancy or the overall cohort. Additionally, 47 of the 55 women reported having hypertension during their pregnancy, but their AMBP monitoring result was not impacted by the specific hypertensive diagnosis they had during pregnancy. Within this subgroup, the AMBP results did vary by race. On average, Black females had significantly higher ambulatory systolic blood pressure readings and an increased incidence of nocturnal hypertension than their white counterparts.

Conclusion: Our results underscore the need for enhanced cardiovascular surveillance and preventive health strategies for women with hypertension. By advocating for the integration of diagnostic tools like ambulatory blood pressure monitoring and home blood pressure monitoring into routine care for women with elevated blood pressures, particularly those of childbearing age, we hope to reduce the risk of misdiagnosis and ultimately empower women to make informed treatment decisions, adopt necessary preventative lifestyle changes, and optimize their overall health and well-being.

23) WHEN THE CURE BECOMES THE CULPRIT: A CASE REPORT OF CEFEPIME INDUCED NEUROTOXICITY

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Introduction: Cefepime is a fourth-generation cephalosporin that is widely used clinically due to its broad antimicrobial coverage of both gram-positive and gram-negative organisms, including strains resistant to earlier generations of cephalosporins. Cefepime has adverse effects including neurologic side effects. We describe a case of cefepime-induced neurotoxicity.

Clinical Vignette: An 82-year-old male with a past medical history significant for end-stage renal disease (ESRD) on hemodialysis and dementia who presented with cellulitis at his tunneled dialysis catheter site. Additional concerns were for urinary tract infection and bacteremia for which cefepime, and vancomycin were initiated. On day three of admission, he developed acute encephalopathy, aphasia, and a seizure. Work-up was negative for structural, electrolyte, and infectious etiologies of altered mental status. Cefepime was discontinued; he was transferred to the ICU where he was started on Keppra and had a run of hemodialysis. Two days later, he had returned to his mental status baseline, and he was subsequently discharged.

Discussion: This case highlights the underrecognized, but treatable, risk of developing encephalopathy after initiation of cefepime. Our patient's presentation is consistent with cefepime-induced neurotoxicity (CIN) with the development of acute encephalopathy, seizure, aphasia, and characteristic EEG findings of generalized slowing and triphasic waves. Other causes were explored, including vancomycin-induced encephalopathy. However, this would be unlikely as cases of vancomycin-induced encephalopathy are relatively rare and are associated with uremia or Drug Reaction with Eosinophilia and Systemic Symptoms. Increased risk of CIN occurs in patients with renal impairment is due to reduced renal clearance of cefepime. Cefepime is then available to cross the blood-brain barrier and acts as a competitive GABA antagonist. This can result in central neurotoxicity and lower the seizure threshold.

Cefepime should be immediately discontinued if CIN is suspected. In most cases, discontinuing cefepime and continuing supportive care, including careful monitoring of renal function and neurological status, and ruling out the occurrence of a stroke, is sufficient treatment. In severe cases, hemodialysis to remove excess drug and anticonvulsants may be considered. Most neurological symptoms resolve within days of stopping the drug, but may persist for longer in some cases. Because of CIN, patients on cefepime should be monitored closely, the lowest effective doses of cefepime should be used, and alternative agents should be considered in those with renal impairment.

24) A STRUCTURED FRAMEWORK FOR EVALUATING CLINICAL LEARNING ENVIRONMENTS: DEVELOPMENT OF A CLINICAL REPORT CARD TOOL

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Across U.S. medical schools and residency programs, considerable efforts have been made to evaluate the quality of clinical learning environments (CLEs) and their impact on training future physicians. CLEs serve as critical spaces for collaborative learning and reciprocal development between trainees and faculty, making them essential to the function of academic medical centers. Despite this importance, a relative paucity of literature exists on the development and implementation of Clinical Learning Report Cards (CLRCs)—structured tools designed to quantify and summarize CLE performance by identifying program strengths and areas for improvement. This project aims to develop and pilot an internal CLRC for the Department of Medicine at the Medical College of Wisconsin (MCW), utilizing trainee surveys, course/rotation evaluations, and reflective narratives. It is structured around four key domains identified in the CLE literature—personal, social, material, and organizational—with a particular emphasis on measuring trainee self-efficacy, self-actualization, and psychological safety. To generate the CLRC, we will analyze quantitative survey data alongside qualitative data from reflective writing prompts completed by trainees following their internal medicine clerkships or rotations. Narrative data will be reviewed to identify recurring themes, which will be categorized within the relevant domains and subdomains. Recognizing that some reflections may span multiple domains, this process will require thoughtful thematic analysis and cross-categorization. Notably, this CLRC places a strong focus on psychological safety within the social domain, which we believe is essential to evaluating the overall health of the CLE. The implementation of this tool offers a centralized, easily disseminated method for assessing CLE quality, identifying actionable opportunities for improvement, and supporting continuous quality enhancement. Moreover, it may serve as a scalable model for other departments and institutions seeking to better understand and improve trainee experiences through structured, domain-driven feedback. Through this initiative, the Department of Medicine at MCW will be equipped to more effectively recognize areas of strength to build upon, as well as areas of concern that warrant targeted intervention. Broader dissemination of this CLRC framework may enable academic medical centers nationwide to systematically assess and enhance their CLEs, ultimately improving both medical education and patient care.

25) PHENOTYPIC PLASTICITY IN MELANOMA: GANGLIONEUROBLASTIC TRANSDIFFERENTIATION AFTER PEMBROLIZUMAB

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Introduction: Ganglioneuronal and ganglioneuroblastic transdifferentiation in melanoma is exceedingly rare, with only a handful of reports in both the primary and metastatic settings. This phenotypic transformation and its impact on long-term outcome are not well understood. We present a patient with locally advanced cutaneous melanoma, with soft tissue and lymph node involvement, whose melanoma transdifferentiated into a ganglioneuroblastic phenotype following neoadjuvant anti-PD-1 therapy with pembrolizumab.

Case Description: A healthy male in his early 70s presented with primary cutaneous melanoma, lentigo maligna subtype, involving the left postauricular skin. He underwent a wide local excision with a positive margin and left cervical sentinel lymph node (LN) biopsy, showing involvement of two LN, with a resultant at least stage IIIC (pT4aN2a) disease. Pathology revealed a deep malignant melanoma with conventional epithelioid and spindle cell invasive components, along with an overlying in situ component. Next generation sequencing (Tempus xT panel) revealed an NRAS (p.Q61R), TERT (c.-124c>T) promoter, and ARID2 (p.Q651*) mutations.

One month following initial excision, the patient developed new left cervical lymphadenopathy consistent with disease progression. FDG-PET/CT revealed metabolically active subcutaneous uptake just posterior to the site of original excision and an FDG-avid 14 mm posterior cervical LN, but no distant metastases. He went on to receive neoadjuvant anti-PD-1 therapy with pembrolizumab every 3 weeks for 3 cycles. End of treatment CT scans performed showed interval enlargement of several nearby LN consistent with progression, but no evidence of distant metastatic disease. He then underwent a complete surgical resection.

The resection specimen revealed undifferentiated cells with demonstrated loss of expression of conventional melanocytic markers such as SOX10, S100, the melanoma cocktail (MART-1 and HMB45), and MiTF, indicating dedifferentiation. There were eosinophilic nests resembling neuroblastoma expressed neuron specific enolase and PHOX2B, consistent with transdifferentiation into an immature ganglioneuroblastic phenotype.

Discussion: This case illustrates a rare instance of immunotherapy-associated lineage reprogramming in melanoma. Melanoma and neuroblastoma share neural crest origin, which may explain this phenotypic shift. Cytokines such as TNF-α and IFN-γ, upregulated during PD-1 blockade, are known to suppress melanocytic differentiation markers like MiTF and promote alternative differentiation states. While dedifferentiation is often associated with immune evasion and therapeutic resistance, our patient's continued disease control suggests that ganglioneuroblastic transdifferentiation does not necessarily indicate poor prognosis. Further studies are needed to clarify its clinical significance and impact on immunotherapy treatment.

26) FROM SAP TO SCAN: FOREST FEVER LEADS TO UNEXPECTED BRAIN MASS FINDING

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INTRODUCTION: Headache accompanied by fever in a young adult often raises suspicion for infectious etiologies, particularly in the context of recent outdoor exposure. When no cause is identified despite intensive evaluation and diagnostic testing, a diagnosis of fever of unknown origin (FUO) is made. In rare cases, structural abnormalities can mimic infectious syndromes, complicating accurate diagnosis.

CASE DESCRIPTION: A previously healthy 23-year-old male presented to the emergency department (ED) with several days of worsening frontal headaches that radiated to the temples, intermittent fevers, photophobia, fatigue, and hypotension. His symptoms began shortly after a weekend spent collecting sap from maple trees and making maple syrup with his family in rural Wisconsin, raising concerns for possible tickborne disease. He described his headache as a constant "pressure" exacerbated by upright posture and bright lights, and partially relieved by laying down, darkness, and ice. He denied knowledge of any rashes, bites, or recent illnesses. Initial workup revealed leukopenia, thrombocytopenia, transaminitis, and hyponatremia. On physical exam, there were no focal neurologic deficits. Lumbar puncture and an extensive infectious workup including tickborne serologies, EBV, CMV, HIV, hepatitis, and blood smear were negative. He was started empirically on ceftriaxone and doxycycline. A non-contrast head CT revealed ventriculomegaly concerning for hydrocephalus. A subsequent brain MRI showed a pineal gland cyst exerting mass effect on the cerebral aqueduct, causing obstructive hydrocephalus with transependymal cerebrospinal fluid (CSF) flow. Neurosurgery was consulted and recommended conservative management with outpatient follow-up given uncertainty about whether the patient's symptoms were attributable to the pineal cyst or an underlying infectious cause of FUO. Following a week of in-hospital care, the patient was discharged. His FUO resolved, but he returned to the ED within a week due to other unresolved symptoms. He underwent an epidural blood patch due to concern for CSF leak, but his symptoms continued to progress including worsening headache, imbalance, and visual disturbances. Despite initial conflicting recommendations regarding surgical intervention due to FUO, a second neurosurgical evaluation confirmed obstructive hydrocephalus due to the large pineal cyst. The patient continues to follow-up with neurosurgeons to determine optimal surgical management, either observation with serial imaging or surgical resection.

DISCUSSION: Here we report a case of obstructive hydrocephalus induced by a pineal gland cyst in a patient who presented with fever, headache, and systemic symptoms initially suggestive of a tickborne or viral illness. This case illustrates the diagnostic challenge of febrile headaches in a healthy young adult with recent outdoor exposure. Pineal cysts are often incidental and asymptomatic. However, when large enough to cause mass effect on the cerebral aqueduct, they can obstruct CSF flow, resulting in non-communicating hydrocephalus. In this patient, the obstructive effects of the pineal cyst mimicked symptoms of infection, delaying definitive diagnosis. This case highlights the importance of considering structural lesions in patients with progressive or atypical symptoms, even when an infectious etiology seems plausible.

27) THINKING OUTSIDE THE THORAX FOR RECURRENT PERICARDIAL EFFUSIONS

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Angiosarcoma is a rare and aggressive malignancy within the spectrum of soft tissue sarcomas, characterized by its endothelial origin and variable anatomic location. When involving the heart or pericardium, it often presents insidiously, with recurrent pericardial effusions and symptoms of pericarditis, features that are inherently nonspecific and diagnostically challenging, particularly when cytology is unrevealing.

Mr. M is 34 year old man with a history of remote tobacco use who presented in December 2024 with dyspnea, epigastric pain, and nausea. He was diagnosed with idiopathic pericarditis with a large pericardial effusion requiring pericardiocentesis. Two weeks later, he developed a segmental pulmonary embolism, thought to be provoked by recent hospitalization and systemic inflammation from pericarditis; he was discharged on apixaban.

In January 2025, he was readmitted with recurrent symptoms and cardiac tamponade. A pericardial drain removed 1350 mL of bloody fluid, but due to recurrence he underwent a pericardial window. Despite extensive infectious, rheumatologic, and cytologic testing, the etiology of his recurrent pericardial effusion remained unclear and was suspected to be post-viral or idiopathic.

In March , he presented to the ER with worsening radicular left lower extremity pain and weakness. The pain was originally thought to be secondary to a known disc herniation; however, an elevated CRP prompted an MRI that revealed a 10 cm left iliacus muscle mass concerning for malignancy or abscess and a nonspecific hemisacral imaging abnormality. He also had a new pleural effusion and hypoxia. Thoracentesis showed lymphocyte predominance, but cytology did not reveal any malignant cells. Sacral bone biopsy returned as angiosarcoma, spindle cell variant, with radiographic evidence of widespread metastatic disease involving the pelvis, spine, liver, heart, and lung. Pericardial biopsy confirmed angiosarcoma involving the pericardium.

The iliac mass was likely the primary tumor site, but this was not identified on initial workup, which was focused on non-malignant etiologies. He was referred for radiation therapy and outpatient chemotherapy with paclitaxel which has decreased his tumor burden.

The workup for recurrent pericarditis typically includes causes such as infection, autoimmune disease, malignancy, and metabolic causes. In this case, initial diagnostic workup was unrevealing, and a definitive diagnosis was only established after new lesions were identified in the setting of worsening low back pain. Although malignancy is a recognized but uncommon cause of pericardial disease, sarcomas themselves account for fewer than 1% of all adult malignancies, with spindle cell sarcoma representing an even rarer histologic subtype within this already uncommon group. According to data from the Surveillance, Epidemiology, and End Results (SEER) program, only 3,299 cases of spindle cell carcinoma were identified over a 44-year period from 1973 to 2017. In retrospect, the presence of recurrent hemorrhagic pericardial effusions and an unprovoked pulmonary embolism in an otherwise healthy young man should have raised suspicion for an underlying malignancy and prompted further imaging outside of the thorax. This case highlights the diagnostic complexity associated with rare malignancies such as angiosarcoma and underscores the importance of maintaining a broad differential diagnosis when evaluating persistent or unexplained pericardial pathology.

28) HYPERCALCEMIA EXACERBATED BY HYPERVITAMINOSIS D IN AN ELDERLY PATIENT

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Introduction: Hypercalcemia can be a major medical concern. This is characterized by serum calcium levels greater than 10.2 mg/dl and is often moderated by hyperparathyroidism or vitamin D levels. Although many patients remain asymptomatic, mild to severe symptoms can occur if left untreated. Most common symptoms of hypercalcemia include renal stones, bone pain, GI upset, polyuria, and central nervous system disturbances. However, identifying the source of hypercalcemia can present a therapeutic challenge in older adults with multiple comorbidities.

Case Description: An 81-year-old male with a past medical history of Parkinson's disease, glaucoma, and hypertension presented to the ED with cough, ear pain, and confusion. Upon admission, he received treatment for otitis externa and cough, while hypercalcemia (12.7 mg/dL) was discovered during the initial lab work up. Initially, 1 L of fluids was administered in the emergency department, in addition to telemetry monitoring, and daily calcium trending while in inpatient hospital admission until the levels normalized. Extensive workup yielded a low PTH (7.4pg/ml), an elevated ionized calcium (1.59 mmol/L), normal TSH (0.940 uIU/mL), and significantly elevated vitamin D 25-hydroxy (>150.00 ng/mL). The patient did not have a history of other common causes of hypercalcemia such as granulomatous disease, familial hypocalciuric hypercalcemia, or multiple myeloma. In the absence of these causes and no offending medications, excess supplementation became the most likely cause. After discussing with the family and the patient, it became clear that the patient was taking vitamin D supplements with calcium carbonate supplements regularly. Both of these supplements can exacerbate hypercalcemia. Significantly elevated calcium could also have contributed to altered mental status in this patient. We continued to encourage adequate fluid intake in this patient, held supplements while inpatient, as well as provided education on these supplements.

Discussion: Vitamin D deficiency is common in the older adult population, and supplementation is often recommended to reduce the risk of osteopenia. While vitamin D toxicity is most common in children under 5 years old, vitamin D toxicity may be an overlooked cause of altered mental status and hypercalcemia in the older adult population. Especially in older adults with cognitive impairments, unintentional or unsupervised overconsumption of vitamin D supplements may lead to clinical complications that cannot be explained by other malignancy or pathology. This case report speaks to the importance of detailed history taking and thorough medication reconciliation with older adult patients, especially those living alone. It may also suggest the value in regularly assessing calcium levels in older adults taking vitamin D supplements, to screen for overconsumption. Overall, vitamin D toxicity may be a simple yet inconspicuous cause of altered mental status and hypercalcemia in an older adult population and careful history taking can be valuable in the clinical work-up.

29) PERCEPTIONS OF BARRIERS AND FACILITATORS TO ACADEMIC PROMOTION AMONG GENERAL INTERNAL MEDICINE FACULTY

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Background: Promotion is a critical component of academic career advancement. Understanding faculty perceptions of the promotion process can guide institutional efforts to support professional growth and retention. This study explores perceived barriers and facilitators to promotion among faculty in the Division of General Internal Medicine (GIM) at a large academic medical center.

Methods: A cross-sectional survey was distributed to 123 GIM faculty members. The survey included demographic questions and Likert scale items assessing perceived barriers and facilitators to promotion. A total of 51 responses were received (response rate: 41.4%). Descriptive statistics were used to analyze the data.

Results: The majority of respondents were Assistant Professors (78%), with most identifying as Hospitalists (76%). Gender distribution was nearly equal (51% male, 49% female), and 45% of respondents had been in their current role for 1–3 years. Most practiced at the Medical College of Wisconsin (92%).

Promotion was considered "very" or "somewhat important" by 78% of respondents. Key barriers included lack of protected time (mean = 2.30), limited support for scholarly productivity (2.48), and insufficient resources for CV and portfolio preparation (2.70). Mentorship, sponsorship, and access to external referees were moderate concerns, while lack of opportunities to present nationally was rated the least problematic.

Highly rated facilitators for promotion included administrative support for CV/portfolio development (1.89), early-career sessions on the promotion process (1.96), systems to identify faculty ready for promotion (2.02), and representation from GIM on the Department Promotion Committee (2.04).

Conclusions: Early-career faculty value promotion but face structural barriers, particularly related to time, scholarly support, and administrative resources. Targeted interventions—such as early guidance, mentorship, and internal systems to support promotion readiness—may enhance faculty advancement and engagement. Findings underscore the importance of institutional investment in promotion infrastructure, particularly for Hospitalists and Assistant Professors.

30) UNDERSTANDING ACCESS AND TREATMENT CHALLENGES IN MULTIPLE MYELOMA

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Background: Multiple myeloma patients face complex barriers to diagnosis, care access, support, and navigation. This study analyzes patient-reported experiences to identify structural gaps and cluster patients into meaningful segments based on their needs and perceptions.

Methods: We administered an anonymous survey to adult myeloma patients at the Medical College of Wisconsin and via the International Myeloma Foundation, Leukemia & Lymphoma Society, and Facebook groups. The survey assessed demographics, treatment experiences, delays, perceived personalization, and barriers to care. Rule based segmentation of structured responses was used to identify distinct patient personas. Chi-square tests assessed associations. The study was IRB-approved.

Results: A total of 320 participants responded; 289 (90.3%) completed the survey in full. The cohort was predominantly older (55.7%, n=170/305 between 60-75), White (79.3%, n=241/304), female (58.9%, n=179/304), highly educated (89.5%, n=272/304), and suburban (52.5%, n=159/303). Most participants had Medicare (37.8%) and private insurance (30.9%). Most (69.7%) reported a smooth treatment start; delays were primarily due to insurance/cost (4%). Using rule-based segmentation of structured responses, we identified three distinct patient personas: Empowered/Unsupported (n=56; 17.5%) who indicated no emotional support barriers, less interest in navigators, but reports unmet needs such as poor communication. Engaged/Informed (n=105; 32.8%): motivated patients who requested personalized care, clinical trial transparency, or insurance navigation. Delayed/Discouraged (n=35; 10.9%): reported lower support, diagnostic delays, and a strong perception of race-related disparities. Unclassifiable personas (n=124): due to missing or neutral responses.

There was no difference in race across the personas (p=0.08), but 100% of the Delayed/Discouraged group believed race played a role in care, compared with 44% of the Engaged/Informed and 21.4% of the Empowered/Unsupported ($p<0.001$). Minoritized patients (86.7% Black, 100% other minoritized) were more likely to perceive race as a factor (p=0.0024). Empowered/Unsupported patients were significantly more likely to request better communication (100%) and empathy (53.6%), while Engaged/Informed patients prioritized clinical trial access (61%). None of the Delayed/Discouraged patients made this request ($p<0.0001$). Black respondents most frequently expressed the need for greater empathy (53.7%; p=0.0012). Those <60 (40.2%, n=33) were more likely to express interest in clinical trials (p=0.03), this interest did not vary by race (p=0.36). Interest in patient navigation did not significantly differ by education level (p=0.3), suggesting that even highly educated patients may struggle with treatment complexity. Most patients felt their care was personalized (71.1%, 207/291), with no differences by race (p=0.55), but perceptions varied by persona with only 39.1% of Engaged/Informed patients felt their reatment was always tailored, vs. 61.8% of Empowered/Unsupported and 88.6% of Delayed/Discouraged ($p<0.0001$), contrasting patients' expectations with the actual delivery of care.

Conclusion: Patient-reported experiences reveal distinct personas with differing needs, perceptions and expectations of care. While most patients reported smooth treatment transitions and personalized care, gaps persist among highly engaged patients who report unmet communication expectations, personalization, and trial access. Perceptions of racial disparities persist, especially among minoritized groups illuminating the unequal experiences of patients within the myeloma care landscape. These findings stress the importance of segmenting care approaches to align with patient identity, complexity, and support needs in multiple myeloma.

31) PERICARDIAL EFFUSION AND RADICULAR LEG PAIN; AN INSIDIOUS CULPRIT

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Introduction: Angiosarcoma is an aggressive cancer that originates from the inner lining of blood and lymphatic vessels. Variation in presenting signs or symptoms coupled with low incidence rates can result in extensive workup to establish a diagnosis.

Case Description: A 34-year-old male presented to the emergency department with left lower extremity pain and numbness. Other than an admission 2 months prior for idiopathic pericarditis complicated by tamponade requiring a pericardial window, he had been healthy with no notable past medical history or exposures. His presentation was concerning for a herniated disc; however, elevations in inflammatory markers necessitated further imaging. CT Angiography at an outside hospital prior to presentation demonstrated a small left pleural effusion. In our emergency department, he underwent an MRI of the lumbar spine and bony pelvis, which was notable for a mass on the left iliacus muscle. Additionally, he received a transthoracic echocardiogram, which demonstrated pericardial effusion, extrinsic compression of the right side of the heart, and associated elevated right-sided heart pressures. Cardiac MRI showed constrictive or tamponade physiology with a complex loculated effusion along the right ventricle and pericardial enhancement. In short, this patient was found to have pelvic and cardiac pathology, with laboratory evaluation notable for elevated inflammatory markers. With his prior cardiac history, it was unclear if these processes were related or not; nevertheless, the differential diagnosis included infection, rheumatologic disease, or malignancy. A portion of the sacral bone abutting the iliacus muscle mass was biopsied so as to not seed surrounding tissues. Biopsy results demonstrated spindle cell sarcoma, which was determined to be angiosarcoma, spindle cell variety on final pathology. Subsequent radiographic evaluation demonstrated widespread metastatic disease. Throughout the hospitalization, the patient unfortunately had recurrent pleural and pericardial effusions. Thoracic surgery intervened with pericardial drains and a biopsy of pericardial tissue, which confirmed metastatic angiosarcoma. In the face of extensive disease burden, surgical interventions were not offered, and treatment was pursued with chemotherapy and radiation therapies.

Discussion: This case illustrates the aggressive nature of angiosarcoma. Presenting signs and symptoms are broad and range from cutaneous lesions to hematologic derangements or pain related to masses affecting visceral organs and other tissues. Heterogeneity in presenting location and morphology limits the ability for radiographic evaluation to confirm a diagnosis. Instead, pathology assessment with histology and immunohistochemistry is essential. These factors, along with the insidious nature of this cancer, lead to more advanced disease at the time of diagnosis. Although radical surgical intervention and radiotherapy are the hallmarks of treatment, it is essential to enlist all relevant surgical and oncological teams to determine the most appropriate next steps.

32) PERSISTENT HYPOGLYCEMIA DESPITE DEXTROSE: UNCOVERING STEROID-INDUCED CENTRAL ADRENAL INSUFFICIENCY

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Introduction: Central Adrenal insufficiency (AI) is a condition where there is inadequate stimulation of adrenal glands due to dysfunction in the hypothalamus or pituitary gland, not the adrenal glands themselves. Patient presentation is insidious with gradual development and usually non-specific (fatigue, weight loss, GI complaints, hypoglycemia, hyponatremia, normocytic anemia). Most common cause is exogenous steroids, but also trauma, pituitary tumors, surgery or radiation to pituitary and infiltrative diseases like sarcoidosis.

Case: A 63-year-old male presented from nursing facility with altered mental status with a last known well the evening prior to admission. A FAST was called for suspicion for post-ictal state versus a generalized encephalopathy. The patient had a history of a seizure disorder with the last one being a few months prior. A brain MRI confirmed no acute early subacute infarcts. Continues video EEG noted epileptiform discharges in left temporal region, focal slowing in left temporal region and diffuse slowing of the background without any seizures or clinical events recorded. The patient also had a low blood glucose, hypokalemia, hypophosphatemia, hypocalcemia and hypoglycemia on arrival, likely secondary to poor nutritional intake. The patient was given D5 infusion to start, but there was minimal improvement in either mentation or blood glucose levels. Therefore, dextrose infusion was escalated to D10, which had initially shown adequate improvement, but the patient was still having fluctuations of low blood glucose especially overnight and was still somnolent. The patient was also slightly anemic on admission and a peripheral blood hematopathology review showed a normochromic normocytic anemia with increased echinocytes and acanthocytes but no evidence of hemolysis. TSH was within normal limits, so a cortisol AM was ordered to assess for adrenal insufficiency. This measure came back low (3.1 ref: 4.8-19.5 ug/dl) and subsequent ACTH stimulation test, cortisol at 30 minutes (8.5 ref: > 15 ug/dl) and cortisol at 60 minutes (10.5 ref: >18 ug/dl) confirmed the diagnosis of adrenal insufficiency. Of note, this patient had a history of moderate to severe COPD and had been on multiple courses of prednisone in the past, with an exacerbation requiring a high dose of prednisone taper most recently the month prior to admission. The patient was treated with a glucocorticoid for adrenal insufficiency, secondary to corticosteroid use.

Discussion: The diagnosis of secondary AI is usually based on clinical clues and patient history of either chronic steroid use or pituitary disease. Diagnosis is usually confirmed by a cortisol AM test followed by an ACTH stim test. Treatment is glucocorticoids upon diagnosis, followed by assessment for any other pituitary hormone deficiencies, particularly thyroid or growth hormone.

33) IN UTERO CYTOMEGALOVIRUS INFECTION SHAPES FETAL NK CELL MATURATION AND ANTIGEN-SPECIFIC RECALL CAPACITY

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Introduction: Congenital cytomegalovirus (cCMV) infection is the leading cause of intrauterine infection in the United States, affecting approximately 1 in every 100 live births. Transmission occurs vertically, with cytomegalovirus (CMV) passing from an infected mother to the developing fetus via the umbilical cord. While the majority of infected neonates remain asymptomatic, around 10% present with serious congenital complications, such as microcephaly, sensorineural hearing loss, cerebral palsy, intrauterine growth restriction, and, in severe cases, perinatal death. The factors influencing disease severity are not fully understood, but emerging evidence suggests that fetal immune immaturity may play a contributory role. Among fetal immune cells, natural killer (NK) cells are the first lymphocyte subset to develop during gestation and are critical in controlling CMV infections. A subset of these cells, characterized by the expression of NKG2C, can recognize CMV-infected cells through interaction with HLA-E molecules presenting the viral gpUL40 peptide. Despite their potential importance, the role of fetal NK cells in cCMV remains poorly defined. In particular, the development, phenotype, and functional capacity of NK cells within the umbilical cord during congenital CMV infection have yet to be systematically investigated.

Methods: Umbilical cord blood and matched cord tissue samples were obtained from fetuses with uncomplicated gestational histories. All samples were provided by the Medical College of Wisconsin Tissue Bank and processed within 24 hours of live birth.

Single-cell suspensions were generated from both cord blood and tissue specimens. Fetal NK cells were isolated and subsequently exposed to a panel of peptides, including the CMV-derived antigenic peptides, as well as human self-peptide. These peptides were obtained from the National Institutes of Health Tetramer Core Facility. In parallel, isolated fetal NK cells were prepared for single-cell RNA sequencing (scRNA-seq). Following sequencing, cells were filtered based on quality control parameters, and transcriptional clustering was performed according to the number of uniquely expressed genes to define distinct NK cell subsets.

Results: Unbiased clustering of scRNA-seq data revealed five distinct fetal NK cell populations in umbilical cord blood and four populations in matched umbilical cord tissue. In fetuses exposed to CMV during gestation, the NK cell populations were predominantly composed of transcriptionally mature subsets. In contrast, NK cells from CMV-unexposed (naïve) fetuses were largely comprised of immature subsets. Functional analysis demonstrated that NK cells from CMV-exposed fetuses mounted a robust recall response to CMV peptide stimulation, characterized by a significantly higher frequency of responding cells and enhanced interferon-gamma (IFN-γ) production. In comparison, NK cells from unexposed fetuses produced markedly lower levels of IFN-γ following antigen exposure. Importantly, we identified a unique population of fetal NK cells that emerged specifically in response to CMV antigen exposure, suggesting virus-driven differentiation within the developing immune system.

Significance: This study demonstrates that congenital CMV infection shapes the composition of fetal NK cell subsets and that re-exposure to CMV antigens elicits a robust recall response. These findings offer valuable insight into the early programming of antiviral immunity and may inform the development of novel NK cell-based immunotherapeutic strategies to prevent symptomatic congenital CMV infection.

34) A CHALLENGING CASE OF MSSA BACTEREMIA WITH SUBSEQUENT OSTEOMYELITIS

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Introduction: Osteomyelitis is an infection of the bone due to acute or chronic inflammatory processes secondary to bacterial, fungal, or mycobacterial infection. Bone can become susceptible to infection though a large inoculum of bacteria from trauma, ischemia, or the presence of foreign bodies. In the setting of bacteremia, seeding of bone can occur from a distant source of infection, contiguously through surrounding tissue or joints, or from direct inoculation of bone from trauma or surgery. When osteomyelitis is suspected, it is critical to obtain radiographic imaging via MRI to determine the extent of bony destruction, as well as a bone biopsy to establish a histopathological diagnosis and identify the causative pathogen. The following case highlights MSSA bacteremia complicated by spinal osteomyelitis, psoas abscesses and foot abscesses.

Case Presentation: A 64-year-old male with history of peptic ulcer disease, iron deficiency anemia, CHF and tobacco use was admitted to the hospital for an upper GI bleed and acute blood loss requiring 2 units of RBC transfusions. After emergent EGD, an actively bleeding pyloric ulcer was clipped, and he was discharged after stabilization.

5 days later, he returned with fever, hypotension and full body pains along with suspicion for left toe cellulitis. Blood cultures revealed MSSA; TTE showed no endocarditis. IV cefazolin treatment was initiated. On hospital day 3, he developed severe lumbosacral pain with tenderness to palpation in the L2-S4 region, and subsequent MRI showed concerns for lumbar osteomyelitis and discitis with small psoas abscesses. At this point, blood cultures were negative for MSSA, and additional imaging ruled out septic arthritis but showed abscesses in the right foot. By day 9 of his hospital stay, new fevers and left knee swelling developed. Arthrocentesis revealed MSU crystals, consistent with gout and a repeat MRI demonstrated a worsening epidural abscess, but no acute indication for surgical intervention per neurosurgery. This patient remains hospitalized, with infectious disease and neurosurgery continuing to follow, and plans for completion of his antibiotics and image-guided biopsy or drainage.

Discussion: This case illustrates a cascade of infectious complications originating from MSSA bacteremia. Spinal osteomyelitis often presents with nonspecific symptoms such as fever and back pain. Blood cultures are positive in a significant proportion of cases, often revealing Staphylococcus aureus as the culprit pathogen. Blood cultures should be taken to guide antibiotic choice, while inflammatory markers such as CRP and ESR assist in monitoring response. Additionally, source control through aspiration or drainage is essential when feasible. Management of complications involves prompt abscess aspiration and long-term antibiotic therapy.

Conclusion: Clinicians must maintain a high index of suspicion for spinal infection in bacteremia patients with new onset of back pain, as a delay in recognition can result in neurological compromise and prolonged hospitalization. Early imaging and multidisciplinary collaboration are critical in preventing adverse outcomes.

35) IMPACT OF A SUBCUTANEOUS INSULIN PATHWAY FOR ADULTS WITH DKA IN THE EMERGENCY DEPARTMENT

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Background: Intravenous (IV) insulin remains the standard treatment for diabetic ketoacidosis (DKA), but growing evidence supports the use of subcutaneous (SC) insulin for mild to moderate cases. SC insulin protocols may offer clinical and operational benefits, particularly in reducing intensive care unit (ICU) utilization. However, real-world data on their implementation in emergency departments remains limited. Froedtert Hospital implemented a SC insulin protocol in their Emergency Department in May, 2021. This research aims to assess the effectiveness of this newly implemented protocol on cost and health outcomes.

Objective: To evaluate the safety, efficacy, and cost-effectiveness of a newly implemented SC insulin protocol for treating mild to moderate DKA in the ED.

Methods: This quasi-experimental study retrospectively compared adult patients with mild to moderate DKA treated with traditional IV insulin (pre-pathway group, n=112) and those managed with a new SC insulin protocol (pathway group, n=99) at a single academic medical center. Key outcomes included ED and hospital length of stay (LOS), treatment costs, ICU admission rates, adverse events (hypoglycemia, hypokalemia), and time for closure of anion gap.

Results: No significant differences were observed in hospital LOS, ED LOS, time to resolution of acidosis, or incidence of hypoglycemia and hypokalemia between groups. However, the median hospitalization cost was notably lower in the pathway group ($15,530 vs. $18,927). Results suggest a trend toward reduced ICU utilization but are not conclusive due to low sample size of ICU admissions in both groups.

Conclusion: This study adds to the growing support of SC insulin treatments being a safe and cost-effective alternative to IV insulin for managing mild to moderate DKA in the ED. Additionally, the implementation of this new protocol in a single academic medical supports the feasibility of implementing such treatment protocols in other hospital systems. These findings support broader implementation of SC protocols, though further prospective studies are needed to confirm reductions in ICU utilization and operational efficiencies. Additionally, while SC protocols may reduce the total cost burden for mild to moderate DKA patients, it may not improve the throughput of patients in the ED or impact total LOS.

36) THE REFLEX DEXAMETHASONE SUPPRESSION TEST: DEVELOPMENT AND ASSESSMENT OF REFLEXED SERUM DEXAMETHASONE MEASUREMENT FOR THE DIAGNOSIS OF CUSHING SYNDROME

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Background: Screening for Cushing Syndrome (CS) can be performed by the low-dose overnight serum dexamethasone suppression test (oDST) with the simultaneous measurement of serum dexamethasone concentration to assure an effective dose and absorption.

Objective: This study evaluated the utility of only reflexing samples for the measurement of dexamethasone in samples with non-suppressed serum cortisol.

Methods: This retrospective cohort study included 261 oDSTs completed in the 6-month period before Reflex implementation (Pre-Reflex-oDST) and 281 oDSTs completed after (Post-Reflex-oDST). Serum cortisol and serum dexamethasone data were paired to each patient's CS diagnosis and analyzed with comparative statistics and ROC analysis.

Results: CS was diagnosed in 38 of 261 Pre-Reflex-oDSTs (14%) and 40 of 281 (14%) Post-Reflex-oDSTs. In oDSTs with SerCort >1.8 mcg/dL, there were 9% and 6% false positives in the Pre- vs Post-Reflex-oDST group, respectively. In the Pre-Reflex-oDST group, the median SerCort was 1.1 mcg/dL (95% CI: 0.8–1.5) in patients without CS and 3.9 mcg/dL (95% CI: 2.6–7.9) in those with CS ($p< 0.001$). The optimal ROC cutoff of SerCort in the Pre-Reflex-oDST group was 2.1 mcg/dL (sensitivity 92%, specificity 93%). In the Post-Reflex-oDST group, the median SerCort was 1.1 mcg/dL (95% CI: 0.8–1.5) in patients without CS and 2.9 mcg/dL (95% CI: 2.6–7.9) in those with CS ($p< 0.001$). The optimal ROC cutoff of SerCort in the Post-Reflex-oDST group was 2.0 mcg/dL (sensitivity 93%, specificity 100%; not different from Pre-Reflex-oDST group).

Conclusion: Reflex measurement of serum dexamethasone does not affect oDST test performance while reducing costs.

37) A CONFIRMED CASE OF RAT BITE FEVER

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Introduction: Rat bite fever is a rare disease most commonly caused by infection with S. moniliformis. The actual incidence is unknown because the causative bacteria are difficult to identify, but a 2013 case report found that between 2000 and 2012, only 17 confirmed cases of rat bite fever were identified in the state of California. The mortality rate if left untreated is approximately 13 percent, so prompt identification and treatment are essential for avoiding mortality.

Case: A 39-year-old male presented to the emergency department with severe arthralgias in his bilateral shoulders, elbows, wrists, and knees, as well as pain, erythema, and warmth of his right 3rd MCP joint and left 2nd MCP joint. Approximately one week prior to admission, he developed both diarrhea and vomiting that persisted for 24 hours and resolved without intervention. Three days prior to admission, he was removing his pet rats from their cage when one of the rats scratched his back. Within hours of being scratched, he developed diffuse arthralgias that progressively worsened until he presented to the emergency department.

Upon admission, he was initially afebrile but tachycardic. Physical exam was notable for tenderness to palpation in his bilateral neck, shoulders, elbows, wrists, knees, and MCP joints, along with erythema, edema, and warmth in his right 3rd MCP joint and left 2nd MCP joint. Lower extremity weakness was present bilaterally. His patellar reflexes were brisk bilaterally, bordering on 4+. Labs were significant for a leukocytosis of 26.5, as well as a CRP of 327.4 and ESR of 97. He eventually spiked a fever as high as 102.6 F several hours after admission.

Head CT, lumbar puncture, and MRI of the lumbar and thoracic spine were negative. Testing for hepatitis A, B, and C, as well as HIV, were negative as well.

The patient was given vancomycin, ceftriaxone, ampicillin, acyclovir, and dexamethasone for empiric meningitis coverage. Because of the concern for zoonosis, doxycycline was also given. Ultimately, the meningitis coverage was discontinued due to the negative workup, and the patient was switched to oral amoxicillin. He continued to improve, and 5 days after admission, he was discharged home in stable condition on amoxicillin. Approximately one week after his discharge, his culture grew gram negative rods consistent with streptobacillus moniliformis, confirming the diagnosis of Rat Bite Fever. He denied any recurrence of symptoms and was instructed to finish his previously prescribed course of amoxicillin.

Discussion: This case represents a rare instance of rat bite fever. Because of its difficulty to culture, confirmatory testing was unattainable in this scenario. Given the negative workup and history of rat bite, as well as improvement on the appropriate antibiotic regimen, it is very likely this represented a case of rat bite fever. The patient's swift recovery underscores the need for rapid identification and treatment to avoid morbidity or mortality.

38) A CASE OF AUTOIMMUNE THYROIDITIS PRESENTING AS APRAXIA

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Introduction: Autoimmune thyroiditis is a condition wherein antibodies attack the thyroid gland, resulting in hypothyroidism. Typical symptoms include fatigue, weight gain, constipation, and cold intolerance, but hypothyroidism can have a heterogeneous presentation. Diagnosis of autoimmune thyroiditis is made with an elevated TSH, decreased free T4, and presence of anti-thyroid peroxidase antibodies. Imaging of the thyroid gland can assist in confirming the diagnosis as well. It is important to identify hypothyroidism early, as it may also cause encephalopathy or progress to more severe conditions, including myxedema coma.

Case Description: A 20-year-old female with no past medical history developed myalgias, malaise, and congestion that waxed and waned for several days. Four days after the onset of her illness, she had an episode of apraxia and expressive aphasia. She was evaluated at an outside emergency department, who did not perform any testing and discharged her with a working diagnosis of a panic attack. A day after discharge, she experienced another episode of apraxia, in addition to the onset of a headache, prompting presentation to our emergency department. Upon further questioning, ED providers learned she had spent the summer working as a camp counselor. In addition to her malaise that began 6 days prior, she also experienced a rash that spanned her bilateral upper and lower extremities but spared the palms of her hands and the soles of her feet. She denied any known tick bites.

An extensive workup was started, including inflammatory markers, lumbar puncture, MRV brain, TSH, and testing for infectious causes such as HIV, EBV, and tick-borne illnesses. Testing was grossly unremarkable but came back significant for a TSH elevated to 28.3 and a Free T4 decreased to 0.76. A thyroid peroxidase antibody was added on and resulted greater than 600. Neurology had recommended an EEG after the MRV came back negative, which showed mild diffuse background slowing consistent with encephalopathy. At this time, the patient was prescribed levothyroxine for a presumed diagnosis of autoimmune thyroiditis and discharged from the hospital. Symptoms resolved with proper titration of her levothyroxine dose.

Discussion: This case illustrates an example of autoimmune thyroiditis where the primary symptoms were aphasia and apraxia. Common symptoms of hypothyroidism are well-defined, but it is an important diagnosis to consider when faced with unexplained neurological symptoms with subjective complaints of fatigue. Recognition of atypical presentations of hypothyroidism can prevent progression that results in morbidity or mortality.

39) RAPID RESPIRATORY FAILURE DUE TO INFLUENZA A WITH SUPERIMPOSED METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS PNEUMONIA: A CASE REPORT AND REVIEW OF DIAGNOSTIC AND THERAPEUTIC CHALLENGES

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Introduction: Influenza A remains a significant public health concern, accounting for most severe influenza-related hospitalizations and deaths in the United States each year. Patients with chronic comorbidities, such as asthma, are particularly vulnerable to complications, including acute respiratory failure. Superimposed bacterial pneumonias, especially from methicillin-resistant Staphylococcus aureus (MRSA), further increase morbidity and complicate clinical management. Although early antiviral treatment improves outcomes, uncertainty persists regarding when to initiate empiric antibiotic therapy and how to reliably detect bacterial co-infection. This case highlights a patient with influenza A complicated by MRSA pneumonia, underscoring the diagnostic and therapeutic challenges associated with this co-infection.

Case Vignette: A 50-year-old woman with a history of severe persistent asthma, hypertension, iron deficiency anemia, and recent left below-knee amputation presented to the emergency department with shortness of breath, fever, and cough for three days. Initially presumed to have an asthma exacerbation, she received bronchodilators and steroids. Testing confirmed influenza A. She deteriorated rapidly despite initial treatments, requiring BiPAP and later intubation for acute hypoxic hypercapnic respiratory failure. In the ICU, a respiratory pathogen panel confirmed MRSA and influenza A co-infection. She was treated with oseltamivir, linezolid, cefepime, corticosteroids, and bronchodilators. Her hospital course was prolonged due to persistent hypoxia and concern for allergic bronchopulmonary aspergillosis (ABPA), although further testing was negative. She improved with continued inhaler and steroid therapy and was discharged on day 11 with a steroid taper and Pneumocystis jiroveci prophylaxis.

Discussion: This case exemplifies the significant morbidity of influenza A complicated by MRSA pneumonia, even with early diagnosis and antiviral treatment. Four key issues are highlighted: (1) the lack of standardized guidelines for empiric antibiotic use with MRSA coverage in influenza patients, (2) diagnostic limitations of MRSA nasal screening, (3) the role of comorbid asthma as a risk factor for severe outcomes, and (4) emerging data on the pathophysiology linking influenza and bacterial superinfections. While the IDSA recommends empiric MRSA coverage in patients with clinical deterioration or risk factors, nasopharyngeal screening tests may not reliably rule out MRSA pneumonia. Asthma, a common comorbidity, may both mask early signs of pneumonia and independently increase susceptibility to severe outcomes. Additionally, recent research implicates NLRP3 inflammasome activation and altered immune responses in the pathogenesis of post-influenza MRSA infections, presenting future targets for therapy.

Conclusion: Influenza A with superimposed MRSA pneumonia poses a serious threat to patients with chronic respiratory conditions, as demonstrated in this case. Prompt antiviral therapy is necessary but may be insufficient in preventing progression to respiratory failure. Empiric MRSA coverage should be considered early in high-risk patients, even when initial screening is negative. It is crucial to recognize the overlapping presentations of asthma exacerbation and bacterial pneumonia. Improved diagnostic tools and clearer clinical guidelines are needed to reduce delays in treatment and improve patient outcomes. Further research into the immunologic mechanisms behind these co-infections may guide future therapeutic strategies.

40) A RARE CASE OF EXTRACHROMOSOMAL EPISOMAL RUNX1 AMPLIFICATION IN PEDIATRIC B-ALL

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Pediatric B-cell acute lymphoblastic leukemia (B-ALL) is characterized by recurrent chromosomal abnormalities that provide information on risk stratification used to identify appropriate treatment protocols. Intrachromosomal amplification of RUNX1 (iAMP21) is a recently recognized rare but recurrent entity, occurring in approximately 2% of pediatric cases, characterized by the presence of 5 or more total copies of RUNX1 by interphase fluorescence in situ hybridization (FISH) analysis and 3 or more copies of RUNX1 on a structurally abnormal chromosome 21. We present an 11-year-old female who presented with fever, lower back pain, and thoracolumbar vertebral compression. Hematological findings included pancytopenia and 28% blasts that were predominantly positive for CD10 and CD19, and she was subsequently diagnosed with high-risk B-ALL. Interphase FISH analysis identified the presence of 5 or more copies of RUNX1, consistent with the pattern associated with iAMP21. A complex rearrangement of 12q including copy neutral loss of heterozygosity involving partial 12q and homozygous loss of exon 2 of SH2B3 was identified by next generation sequencing, a finding that is enriched in B-ALL with iAMP21. Chromosome analysis revealed a karyotype with one structurally abnormal chromosome 21 and two marker chromosomes.

However, metaphase FISH studies showed that the amplified RUNX1 signals were not on the abnormal 21 but were rather present on G-banding negative extrachromosomal structures, presumed to be episomes. While atypical patterns of RUNX1 amplification that don't meet the proposed definition of iAMP21 have been reported in the literature, this case demonstrates extrachromosomal episomal amplification, which is a novel finding.

41) A CASE OF IGG4-RELATED AUTOIMMUNE PANCREATITIS MIMICKING PANCREATIC CANCER

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Background: IgG4-autoimmune pancreatitis is characterized by elevated IgG4-positive plasma cells and lymphoplasmacytic infiltration in the pancreas. Symptoms can be difficult to differentiate from pancreatic cancer. Here, we present a case of a patient who was initially scheduled in oncology clinic for his pancreatic mass but was later found to have IgG4 pancreatitis.

Case Description: An 84-year-old male with no prior medical history presented with several months of painless jaundice, decreased appetite, and unintentional weight loss. He was seen in primary care clinic with these symptoms and had an abnormal abdominal CT scan consistent with a 16mm pancreatic mass. There was no family history of gastroenterological pathology or cancer. He was informed that he likely had pancreatic cancer and was scheduled in multi-disciplinary pancreatic oncology clinic. During a hospital admission for an unrelated, incidentally found atrial fibrillation with slow ventricular response, an endoscopic ultrasound (EUS) and a core biopsy of the mass at the pancreatic head was performed. His surgical pathology results returned 4 days after the biopsy as having lymphoplasmacytic inflammation with 50 IgG4+ plasma cells in the most inflamed high-power field. He was diagnosed with IgG4 pancreatitis, and his oncology appointments were canceled. Serum IgG4 level was ordered and returned at 759.3 mg/dL.

Discussion: Autoimmune pancreatitis has been classified into two clinical subtypes. Type 1 is IgG4-related pancreatitis, associated with high serum IgG4. Type 2 is idiopathic duct-centric pancreatitis, associated with inflammatory bowel disease. The average age at diagnosis of IgG4 pancreatitis is 60-70 and males are more commonly affected. Patients with IgG4 pancreatitis can present similarly to pancreatic cancer, with abdominal pain, jaundice, weight loss, and early satiety. The diagnosis of IgG4 pancreatitis can be challenging and could cause a delay in treatment. EUS-guided biopsy and elevated IgG4 serum levels can help distinguish IgG4 pancreatitis from pancreatic cancer. Is it important to clearly communicate with patients that the definitive diagnosis of pancreatic cancer requires biopsy results.

42) IMMUNE AND GENOMIC HETEROGENEITY OF MET-ALTERED NON-SMALL CELL LUNG CANCER

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Background: In non-small cell lung cancer (NSCLC), the MET tyrosine kinase receptor can be mutated or amplified resulting in dysregulation of receptor function leading to tumor proliferation. MET exon 14 (METex14) mutated and MET amplified (METamp) NSCLC tumors have shown varied response to immunotherapy. Therefore, we aimed to compare the genomic and immune landscape of MET-altered NSCLC.

Methods: The study included 3,841 patients with NSCLC sequenced with the Strata Select assay on the Strata Oncology Platform. Genomic alterations, tumor mutation burden (TMB), programmed death-ligand 1 (PD-L1) expression, and immune gene expression were compared between METamp (copy number gain > 6), METex14, other MET mutations, and MET wild type (METwt) patients. Immune-related gene expression was also analyzed in adenocarcinomas (n = 2,708) with targetable oncogenic drivers. The Kruskal-Wallis test with Dunn's tests for pairwise comparisons or the Mann-Whitney U test were used to compare continuous variables. Frequencies of gene alterations and biomarker categories were compared using Chi-squared tests. Statistics were performed in GraphPad Prism 10.2.3 and in R 4.4.1.

Results: Within the cohort, 129 (3.4%) tumors had METex14 mutations, 70 (1.8%) had MET amplifications, and 67 (1.7%) had other MET mutations. The most common types of METex14 splicing alterations are splice donor site base substitution (31.0%), followed by splice acceptor site indel (30.2%) and D1028 (15.5%). MET gene expression in METex14 (median 12.35) and METamp (median 14.37) were both higher than METwt (median 10.90) ($p < 0.0001$) but highest in METamp ($p < 0.0001$). The most common genomic alterations were TP53 (34.1%) mutations and MDM2 amplification (33.3%) in METex14 and TP53 (87.1%), CDKN2A (28.6%), and EGFR (24.3%) in METamp tumors. TMB was lowest in METex14 patients (median 2.78) and highest in patients with other MET mutations (median 9.859) compared to METwt (median 5.043) ($p < 0.0001$). PD-L1 expression was higher in METex14 (PD-L1 high 64.3%) and in METamp (PD-L1 high 70.0%) compared to METwt (PD-L1 high 41.3%) ($p < 0.0001$). The expression of all 18 evaluated immune genes, including CD4, CD8A, CTLA4, PDCD1, and LAG3 were higher in METex14 compared to METwt and METamp ($p < 0.001$). Tumors with both METamp and EGFR mutations had higher PD-L1 expression compared to tumors with EGFR mutations without METamp ($p < 0.001$). METex14 and METamp had higher receptor tyrosine kinase AXL gene expression relative to METwt ($p < 0.0001$). Comparisons across oncogene-driven lung adenocarcinomas revealed METex14 had an enriched immune landscape while METamp harbored an immunosuppressive environment.

Conclusion: METex14 and METamp differed in genomic co-alterations, TMB, and immune gene expression. These variations provide insight for the inconsistent response to immunotherapy in NSCLC with MET alterations, warranting further investigation. The co-occurring mutations in EGFR and METamp and the high expressions of AXL in MET-altered tumors support ongoing trials that co-target these in MET and EGFR TKI-resistant NSCLC. These findings provide guidance in designing immunotherapy trials and developing new strategies that overcome resistance to targeted molecular therapy.

43) SPARKING POTENTIAL, REVEALING INFANT NEUROCOGNITIVE TRAITS (SPRINT): VIRTUAL ASSESSMENT STUDY PROTOCOL FOR 4- TO 24-MONTH OLDS AT RISK FOR CEREBRAL PALSY

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Background: Infants with Perinatal Neurological Histories–At Risk for Neurodevelopmental Disabilities or Cerebral Palsy (IPNH-NDCP) have an increased risk of developing cerebral palsy (CP), which is associated with cognitive disability and impaired executive function (EF). IPNH-NDCP encompass injuries due to hypoxic ischemic encephalopathy (HIE) as well as significant preterm birth (< 32 weeks gestation), including intracranial hemorrhage and periventricular leukomalacia. The virtual assessment of executive and cognitive function IPNH-NDCP and at risk for CP has yet to be studied. The identification of early cognitive deficits in this population in a virtual setting would be clinically useful, as it could more easily result in earlier interventions for patients at greatest risk.

Objective: SPRINT is a prospective, exploratory, observational cohort study that will examine the development trajectory of EF and cognitive abilities of IPNH-NDCP at regular intervals between 4 and 24 months of age, a critical time in development marked by CP diagnosis and potential emerging delays in cognition and EF. The primary objective of this study is to describe the natural history of EF development at age 4-24 months. A secondary objective of this study is to understand how parental stress impacts the EF development of IPNH-NDCP.

Methods: IPNH-NDCP will be recruited to participate in virtual laboratory visits between 4 and 24 months of age. Extremely preterm patients will participate at corrected ages 4, 9, 18 and 24 months. HIE patients will participate at chronological ages 4, 9, 18 and 24 months. Initial data collection will include: 1) look duration, a measure of early infant attention, 2) quantitative measures of cognitive function and EF, 3) parental perspectives on infant EF and cognitive function development, and 4) parental perspectives on stress levels.

Results: Data collection is ongoing and is expected to last several years. Pilot data were collected and are currently being analyzed to determine the feasibility of conducting virtual assessments of cognitive function and EF.

Conclusions: The SPRINT study will contribute to the growing body of knowledge concerning the trajectory of cognitive and EF abilities among IPNH-NDCP. Additionally, this study holds practical implications for clinical practice by offering an alternative form of cognitive assessment and an easier way to reach a broader population of children at risk for CP.

44) A RARE AND SEVERE CASE OF BACTRIM INDUCED ARDS IN AN ADULT

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Introduction: Trimethoprim-sulfamethoxazole (TMP-SMX) is a commonly prescribed antibiotic with generally good tolerance. While serious adverse effects like cytopenia, SJS, and organ toxicities are known, pulmonary complications – especially acute respiratory distress syndrome (ARDS) – are rare and poorly documented. There are no prior reports of TMP-SMX-induced ARDS in adults requiring ECMO and lung transplantation.

Case Description: A 26-year-old woman was prescribed TMP-SMX for a recurring vaginal mass. Five days into treatment, she developed a full-body rash, fever, myalgia, nausea, and leukopenia. After TMP-SMX discontinuation and symptom resolution, she returned with progressive dyspnea, chest pain, and high fever. Imaging showed basilar infiltrates and, later, diffuse ground-glass opacities and pulmonary emboli. Despite broad-spectrum antibiotics and supportive care, her condition worsened, requiring ICU admission, intubation, venovenous ECMO, and eventually bilateral lung transplantation. Extensive infectious and autoimmune workups were negative. TMP-SMX-induced ARDS was suspected based on timing, clinical progression, and exclusion of other causes.

Discussion: TMP-SMX-induced ARDS may be linked to specific HLA genotypes (HLA-B07:02 and HLA-C07:02) and is characterized by diffuse alveolar damage with delayed epithelial recovery. Though our patient was not genetically tested or biopsied, her imaging aligned with previous case patterns. Given the drug's widespread use and the rarity of this reaction, especially in adults, this case underscores the need for heightened clinical awareness, further reporting, and research to identify at-risk populations and improve outcomes.

45) DIFFUSE LARGE B-CELL LYMPHOMA PRESENTING AS A NECK MASS IN A PATIENT WITH MYASTHENIA GRAVIS: A CASE REPORT OF PERI-CHEMOTHERAPY CRISIS MANAGEMENT

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We report a case of a 70-year-old male with a history of myasthenia gravis who presented with progressive dyspnea and a newly discovered neck mass. Initial evaluation suggested thyroid malignancy, but further workup revealed diffuse large B-cell lymphoma. Management was complicated by myasthenia gravis-related respiratory compromise during chemotherapy initiation, requiring close neurologic and pulmonary monitoring. This case highlights the peri-treatment considerations in patients with concurrent neuromuscular and oncologic conditions.

46) AVOIDING MISDIAGNOSIS OF BILIARY ATRESIA IN INFANT WITH CYSTIC FIBROSIS AND INSPISSATED BILE SYNDROME

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A 5-week-old premature female with cystic fibrosis and prior meconium ileus requiring bowel resection presented with persistent mucousy and acholic stools. Initial percutaneous cholangiogram showed a collapsed gallbladder and inspissated bile without clear contrast flow into the biliary tree. Ursodiol was started to promote bile clearance. She continued to have seedy, yellow tan stools. She subsequently underwent a HIDA scan two weeks later showed no tracer excretion into the bowel suggestive of biliary atresia. Repeat cholangiogram the same day demonstrated inspissated bile, but with gentle injection, contrast filled the biliary tree and reached the small bowel. The patient subsequently had normalization of bilirubin and pigmented stools. This report demonstrates the diagnostic challenges of distinguishing biliary atresia from thickened bile in infants with a history of cystic fibrosis, where repeat percutaneous cholangiogram may prevent unnecessary laparotomy.

47) PATIENT SELECTION FOR OSSEOINTEGRATION AFTER LIMB AMPUTATION: A REVIEW OF CURRENT EVIDENCE AND GAPS IN CLINICAL PRACTICE

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Objective: To synthesize the characteristics of current osseointegration recipients and identify gaps in clinical practice to propose evidence-based eligibility criteria for patient selection.

Summary Background Data: Limb amputation causes significant physical and psychological challenges. Osseointegration (OI) is a cost-effective alternative to socket prostheses, but a lack of clear U.S. eligibility guidelines creates inconsistent patient selection. This scoping review examines current OI recipient characteristics to propose evidence-based criteria, aiming to standardize patient selection and improve outcomes.

Methods & Results: PubMed, Embase, CIANAL, and Cochrane databases were searched following PRISMA-ScR guidelines. This review of 12 included studies revealed an average patient age of 49 years, a mean body mass index (BMI) of 26.2 kg/m2, an average height of 177cm, and a mean weight of 85.5kg. Thirty-two percent of participants were female. Trauma was the most common reason for amputation (64%), followed by tumor (19%), peripheral artery disease (11%), and sepsis (9%). Common inclusion criteria were prior OI and prosthetic socket issues. The review found no evidence of specialty-specific amputation guidelines. Data is available within the article.

Conclusions: This review highlights key demographic characteristics of patients with OI and common eligibility considerations. It also emphasizes the complexity of amputation decisions, influenced by varied surgical specialty perspectives and the importance of strategic amputation site selection for optimal OI outcomes. Developing clear guidelines and a collaborative, multidisciplinary approach is crucial for consistent patient selection, improved access to OI, and enhanced long-term functional outcomes and quality of life for individuals following major limb amputation.

48) CRESCENTIC MEMBRANOUS NEPHROPATHY IN A REMAINING KIDNEY FOLLOWING NEPHRECTOMY FOR RENAL CELL CARCINOMA: A CASE REPORT

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Membranous nephropathy with crescents is a rare and diagnostically challenging variant of membranous nephropathy. In this case, we describe a 41-year-old, male patient with recent nephrectomy for renal cell carcinoma who presented with acute kidney injury, anasarca, and significant proteinuria one month after undergoing nephrectomy for clear cell renal cell carcinoma. Serologic evaluation revealed positive anti-PLA2R antibodies. The biopsy of the remaining kidney revealed PLA2R positive stage-III membranous nephropathy with crescents formation. While most cases of membranous nephropathy (MN) are idiopathic and associated with anti-PLA2R antibodies, approximately 20–25% are secondary to systemic conditions such as infections, autoimmune diseases, medications, and malignancies. The estimated prevalence of cancer in patients with MN is approximately 10%. Among malignancy-associated glomerulopathies, solid tumors, especially of the lung and gastrointestinal tract, are more frequently implicated. Renal cell carcinoma is a documented, but less common association. Although the presence of anti-PLA2R antibodies suggests primary MN, this marker does not exclude malignancy-associated disease. Studies have shown that PLA2R-positive MN can occur in the setting of cancer, possibly triggered by tumor antigens. Crescent formation in MN is rare and often suggests another underlying disease process. In this patient, serologic workup for other causes of rapidly progressive glomerulonephritis was unrevealing. This case highlights the diagnostic complexity of MN in patients with recent malignancy. It underscores the importance of maintaining a broad differential, considering both primary and secondary causes of glomerular disorders, and engaging a multidisciplinary team in diagnostic and therapeutic planning. Continued surveillance is warranted to monitor for malignancy recurrence and guide renal management. This patient was treated with weekly intravenous cyclophosphamide in addition to prednisone, but ultimately hemodialysis was required.

49) COMPLEX PAIN SYNDROMES: A CASE OF OVERLAPPING HYPOTHYROID MYOPATHY AND FIBROMYALGIA

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Background: Hypothyroid myopathy, a common but often underrecognized manifestation of thyroid failure, presents with muscle stiffness, myalgias, cramps, and easy fatigability. Laboratory findings typically include elevated serum creatine kinase, though this may not correlate with symptom severity. Meanwhile, fibromyalgia is a chronic pain syndrome that tends to be more prevalent in women and is defined by widespread musculoskeletal pain, fatigue, sleep disturbances, cognitive dysfunction, and a range of somatic symptoms, including bowel and bladder dysfunction. Notably, there is substantial overlap between fibromyalgia and hypothyroid myopathy. The coexistence of these conditions complicates diagnosis and management, particularly in patients presenting with diffuse pain, fatigue, and neuromuscular symptoms. This case highlights the importance of careful laboratory evaluation, clinical vigilance, and an interdisciplinary approach in managing acute exacerbations of chronic pain.

Case Presentation: A 28-year-old female with congenital hypothyroidism (on home levothyroxine), chronic low back pain, and chronic pelvic pain presented with severe localized mid-lower back pain radiating to the left leg, lower extremity weakness, and acute on chronic urinary/fecal incontinence. Initial evaluation with lumbar MRI, CBC, BMP, and ESR/CRP was unremarkable except for a markedly elevated TSH and low free T4. Due to her inability to ambulate, she was admitted for further management.

Endocrinology attributed elevated TSH to inadequate absorption due to coadministration with a multivitamin; no dose adjustment was made. Physical exam was significant for point tenderness on the lumbar spine with diffuse tenderness in the lower extremities, which did not correlate with the typical musculoskeletal manifestations of thyroid hormone deficiency. She began a multimodal pain regimen including scheduled acetaminophen, pregabalin, and tizanidine with as needed oral hydromorphone. Acute pain service was consulted, given refractory pain, and a ketamine infusion was initiated with limited benefit. Evaluation by physical medicine and rehabilitation noted hyperreflexia in the left lower extremity and a positive Hoffman sign in the right upper extremity; however, cervical/thoracic spine MRI demonstrated no cord signal abnormalities. Creatinine kinase (CK) levels were also elevated to greater than 2000 U/L. Given the normal inflammatory markers, lack of imaging abnormality, and physical exam findings, along with objective laboratory findings of CK and TSH elevation, the clinical impression was consistent with fibromyalgia with concurrent hypothyroid myopathy.

During her hospitalization, her mobility progressed from requiring two-person assistance to minimal assistance. CK trended down, and her medications were optimized with levothyroxine, pregabalin, and tizanidine. She was discharged with further home health services.

Conclusion: This case illustrates the complexity of acute on chronic low back pain in a patient with multiple comorbidities, including congenital hypothyroidism and chronic pain syndromes. Hypothyroid myopathy can significantly contribute to muscle weakness and pain and should be strongly considered in patients with congenital hypothyroidism. The neuropathic features, history of chronic pain, central sensitization, and negative objective findings aided the diagnosis of fibromyalgia as a concurrent contributor to the symptoms. A thorough evaluation combined with multidisciplinary collaboration proved essential in managing this complex case.

50) ZYGOMYCOSIS IN A YOUNG WOMAN WITH LUPUS NEPHRITIS: A DIAGNOSTIC AND THERAPEUTIC CHALLENGE

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Background: Systemic lupus erythematosus (SLE) is a chronic autoimmune condition that frequently presents in young women and requires aggressive immunosuppression, especially in the presence of severe organ involvement such as lupus nephritis. However, immunosuppressive therapy increases the risk for opportunistic infections, including invasive fungal infections (IFIs), which remain a major cause of morbidity and mortality.

Diagnostically, IFIs present a particular challenge in SLE, as their manifestations (fever, malaise, organ-specific dysfunction) often mimic lupus flares. For example, cryptococcal meningitis may be confused with bacterial meningitis, and pulmonary aspergillosis can resemble lupus pneumonitis or encephalopathy. Young individuals with SLE are especially vulnerable to IFIs, with studies showing that high SLE disease activity and current glucocorticoid dose are independent risk factors. Zygomycosis, a rare IFI caused by fungi in the Mucorales order (e.g., Rhizopus spp.), carries a high mortality and often presents with cutaneous, pulmonary, or disseminated disease.

This case highlights the diagnostic and therapeutic challenges in distinguishing infection from autoimmune flare in a young woman with active SLE.

Case Presentation: A 23-year-old woman with newly diagnosed SLE complicated by class IV lupus nephritis and severe pulmonary arterial hypertension presented with a necrotic ulcer on her left upper extremity. Her home immunosuppressive regimen included mycophenolate, prednisone, and belimumab. The ulcer initially developed in January 2025 as a painful lesion. Given that it was unresolving, the patient was referred to dermatology for evaluation. Superficial wound culture and biopsy were obtained, growing Staphylococcus aureus and a filamentous fungus, prompting empirically starting cephalexin. However, with concern for a high-risk infection in the context of immunosuppression, fatigue, malaise, and worsening wound appearance, rheumatology advised that she present to the hospital for further evaluation.

On presentation, the patient was febrile and hypertensive with a large necrotic forearm ulcer. Laboratory findings revealed acute kidney injury, thrombocytopenia, normocytic anemia (requiring transfusion), and Escherichia coli bacteremia from a urinary source. Complement levels remained low with persistently elevated anti-dsDNA titers, consistent with ongoing lupus activity despite immunosuppression. Hemolysis labs were negative. Kidney ultrasound and urine studies suggested pre-renal azotemia progressing to acute tubular necrosis.

Subsequent wound cultures grew methicillin-resistant Staphylococcus aureus (MRSA) and Rhizopus spp. Dermatology punch biopsy confirmed deep fungal invasion, while operative wound cultures grew methicillin-sensitive Staphylococcus aureus and methicillin-resistant Staphylococcus epidermidis. Treatment with intravenous liposomal amphotericin B was initiated, accompanied by close monitoring of electrolytes and renal function. She underwent surgical debridement and allograft placement. Antimicrobial therapy was adjusted per sensitivities with ceftriaxone and daptomycin. Her immunosuppressive regimen was then optimized, and she was discharged with Rheumatology, Nephrology, and Burn/Wound Clinic follow-up.

Conclusion: This case underscores the diagnostic and therapeutic complexity of managing active SLE in the context of opportunistic fungal infection. The clinical overlap between IFIs and lupus flares necessitates a high index of suspicion and timely use of biopsy and cultures. Aggressive early antifungal therapy, surgical debridement, and multidisciplinary coordination were vital to this patient's stabilization. Vigilance in distinguishing infection from flare in immunosuppressed patients is essential to avoid delays in appropriate treatment and improve clinical outcomes.

53) LEGIONNAIRE'S DISEASE IN A SCUBA DIVER WITH ARDS

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Introduction: Legionnaires' disease is a respiratory infection caused by Legionella pneumophilia, a gram-negative rod that grows in aqueous environments. Transmission is primarily through inhalation of aerosols or microaspiration. Signs and symptoms include headache, fever, diarrhea, altered mental status, cough, and hyponatremia. Legionnaires' disease may progress to respiratory failure or acute respiratory distress syndrome (ARDS).

Case Description: A 70-year-old male with a history of hypertension and hypothyroidism presented to an outside hospital (OSH) with fever, fatigue, and diarrhea. Approximately 1 month prior, he traveled to Mexico, where he developed a respiratory illness consisting of congestion, cough, and a sore throat. During the trip, he went scuba diving. After returning to the United States, he was evaluated by primary care, who prescribed amoxicillin, improved symptoms temporarily though they unfortunately returned. Upon admission to OSH, he required supplemental oxygen for hypoxia; laboratory studies showed hyponatremia to 128, lactic acidosis, elevated lipase, and an elevated AST and ALT; chest x-ray revealed bilateral pulmonary opacities. Rocephin and doxycycline were initiated for suspected traveler's diarrhea and pneumonia. Further workup revealed a positive urine Legionella antigen, indicating likely Legionnaires' disease. On day 3 of admission, he developed hypoxic respiratory failure and ARDS. He was transferred to an intensive care unit at a tertiary care center, where he required intubation for 2 days. Antimicrobials were ultimately de-escalated to azithromycin. Respiratory status improved and laboratory abnormalities normalized. The patient was discharged home in stable condition.

Discussion: Scuba diving is not classically associated with the development of pneumonia. Respiratory failure after scuba diving is typically due to barotrauma rather than ARDS, though cases of pulmonary edema have been documented. Here, we present a case in which water was likely aspirated during a scuba excursion, resulting in Legionella pneumonia. Timely diagnosis and treatment of Legionnaires' disease is paramount to decrease the development of ARDS. This case highlights the importance of considering Legionnaires' disease in patients presenting with respiratory complaints and diarrhea who have recent water exposure, particularly if a mask or breathing apparatus was used.

51) DERMATOMYOSITIS WITH ANTI-OJ AUTOANTIBODIES IN A PATIENT WITH MYCOSIS FUNGOIDES: A RARE CLINICAL INTERSECTION

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Introduction: Dermatomyositis (DM) is a rare autoimmune disease that results in proximal muscle weakness and skin lesions and is frequently associated with underlying malignancy. The most frequent malignancies in men are related to the lung, prostate, and gastrointestinal tract. In rare cases, DM can be associated with non-Hodgkin's lymphoma such as cutaneous T cell lymphomas (CTCL). Several autoantibodies have known associations with DM. Anti-OJ autoantibodies are associated with severe myositis in patients with anti-synthetase syndrome (ASS). Anti-OJ autoantibodies are rare and found in less than 5% of idiopathic inflammatory myopathies and target isoleucyl-tRNA synthetase.

Case Description: An 80-year-old male with a past medical history of second-degree AV block, degenerative joint disease, and recently diagnosed cutaneous T cell lymphoma presented to the ED with two weeks if proximal muscle weakness and poor oral intake. Symptoms had acutely worsened the past few days, and he was now having difficulty sitting, standing, and raising arms overhead. On admission, he was found to have known second degree AV block on EKG, transaminitis, elevated creatinine kinase, and significant generalized weakness particularly in hip flexors and shoulders, but no obvious skin findings. Rheumatology recommended muscle biopsy which showed high-titer positive antinuclear antibody (ANA), anti-OJ antibody, and severe highly active chronic inflammatory myopathy. Dermatology confirmed the previous biopsy diagnosis of cutaneous T cell lymphoma, and that patient had completed a course of topical corticosteroids one month prior to admission to which he responded well. Shave biopsy showed lymphocytes in dermo-epidermal junction that were CD8+ and CD4- which was suggestive of tumor stage transition to mycosis fungoides. Given clinical picture of dermatomyositis with underlying mycosis fungoides, he was started on prednisone and IVIG and admitted for inpatient rehabilitation to address weakness.

Discussion: The association between malignancy and inflammatory myopathy has long been established, however patients with cutaneous T cell lymphomas such as mycosis fungoides are exceptionally rare. In this case, we present a patient with dermatomyositis and mycosis fungoides who was positive for anti-OJ autoantibodies. Because cutaneous T cell lymphoma lesions mimic many other diagnoses, diagnosis can be delayed. Additionally, though mycosis fungoides is the most common type of cutaneous T cell lymphoma, the initial quick response to corticosteroids made it very rare that his initial diagnosis would transition to tumor stage mycosis fungoides. This highlights the importance of repeat biopsies to better characterize histology of malignancy and to better provide corticosteroid treatment. Additionally, this patient highlights the benefit of an extended myositis panel to determine rare autoantibodies that may have association with ASS and myositis. Because anti-OJ autoantibodies are associated with more severe types of myositis, this can help guide a more aggressive treatment plan and follow up, including earlier and more intense immunosuppression.

52) BURNING VISION: A RARE PERIORBITAL PRESENTATION OF ERYTHROMELALGIA

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Introduction: Facial Erythema can have a broad differential diagnosis with primarily infectious, traumatic, autoimmune, or dermatologic causes. Erythromelalgia is a rare poorly understood vascular pain condition characterized by erythema, warmth, and recurrent burning pain. Most commonly it affects the bilateral extremities, although in very rare cases can have facial or ear involvement. In most cases it is an isolated idiopathic primary condition, although in 5% of cases there may be some familial genetic inheritance.

Case: A 78-year-old female with a past medical history of transient ischemic attack (TIA), facial cellulitis, migraines, cranial nerve six palsy presented for a few days of recurrent erythema, burning pain, and swelling of the right eyelid. Admission lab work showed mildly elevated C-reactive protein (CRP) with normal erythrocyte sedimentation rate (ESR), afebrile, and normal leukocyte count. CT face, fluorescein, and tonometry were unremarkable. Antinuclear Antibody (ANA), anti-neutrophil cytoplasmic antibody (ANCA), Myeloperoxidase (MPO) Serine Protease within normal limits. She was initially empirically started on doxycycline and Valtrex given initial concern for cellulitis given history and questionable improvement with prior episodes. Pain and skin lesions were migratory, starting on the right half of her face then the left, then the ears. Concern for HSV neuralgia given positive HSV IgG, however, did not fit clinical picture given lack of vesicle and the migratory nature. Dermatology was consulted and felt clinical picture was most consistent with erythromelalgia given heat sensitivity, facial presentation, alleviated by ice, refractory to treatment, and concurrent migraine symptoms. Patient was started on phenytoin and antibiotic therapy was discontinued. Patient felt the phenytoin did not initially help with symptoms and cause nausea and dizziness, though 3 days later symptoms were significantly improved.

Discussion: This case highlights difficulty in diagnosing atypical manifestations of rare complex disorders. Primary erythromelalgia can be idiopathic or inherited, and some studies have shown there may be an underlying genetic component from sodium channel gene mutation in SCN9A, SCN10A, or SCN11A. This patient later found out her daughter was having similar mouth and tongue neuropathic symptoms. Patient also discussed she previously had burning and erythema on her hands and feet, though thought it noncontributory to her current pathology so did not share upon initial admission. Secondary erythromelalgia has been attributed to underlying myeloproliferative disorders autoimmune diseases, and medications, so it is important to do a complete workup upon diagnosis. This case demonstrates the importance of considering atypical presentations of rheumatic and dermatological diseases when considering generalized erythema of unknown origin. Because management can be quite challenging and require an interprofessional approach of behavior modification and medication trials, erythromelalgia should be considered early in presentation.

54) REAL-TIME, BRIEF REFLECTIONS AS A TOOL TO FOSTER PROFESSIONAL IDENTITY DEVELOPMENT IN MEDICAL STUDENTS

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Background: Professional Identity Formation (PIF) has been a central focus of medical education since the Carnegie Foundation released a paradigm-shifting report in 2010 calling for curricular reform emphasizing the "formation of the physician's professional identity." Since then, the LCME has included standards for accreditation in the Functions and Structure of a Medical School which direct medical schools to prioritize professionalism training throughout education. Reflective Writing (RW) is the most studied evidence-based strategy to support PIF. RW has been shown to shown to foster empathy, promote cultural humility, advance PIF, and more. Medical schools across the country use RW in their curricula, but most iterations include lengthy, essay-based writing assignments that are time-consuming and detached from the clinic. We developed a refection tool which aimed to eliminate these barriers and provide students a more accessible space to digest their patient encounters.

Methods: Real-time, brief reflections (RTBR) consist of short (280 character) written reflections completed by students via Qualtrics during or immediately following their days in clinic. Students were prompted to "Write a reflection about your experience with a patient." First-year medical students in their Early-clinical Ambulatory Experience and fourth-year medical students in their Internal Medicine Acting Internship at the Medical College of Wisconsin utilized this tool during the 2023-2024 academic year. A post-rotation survey assessed the utility and contextual significance of the Qualtrics reflection interface. Using empirically backed definitions of PIF, categories, and themes of clinical RW, we deductively coded student reflections to assess how students at different stages of training reflected.

Results: Students voluntarily submitted a total of 85 unique reflections via the RTBR platform. Post-rotation survey results from M1s and M4s showed that most respondents agreed that RTBR were valuable (22/37, 59% and 3/5, 60%), efficient (30/37, 81% and 4/5, 80%), easy to use / familiar (33/37, 89% and 5/5, 100%), and provoked deeper thinking about patients (24/35, 69% and 4/5, 80%). Qualitative analysis has shown that most reflections (56/85, 66%) displayed qualities of PIF. Deductive coding of reflections showed that M1 students focused on the lessons they learned and emotions they noticed from their patients. The M4 students scrutinized their own performance as a clinician and processed their personal emotions.

Conclusions: RTBR offer an efficient and accessible modality for fostering PIF. Post-rotation survey results demonstrated high agreement that RTBRs are valuable, efficient, easy-to-use, familiar, and promote metacognition. Qualitative analysis showed that most reflections exhibited PIF. Comparison between M1 and M4 student reflections revealed that as learners move through medical training, they may become more aware of themselves as impactful actors and contributors in the medical profession. Students gain the confidence to compare how their own values, beliefs, and goals align with that of an "ideal physician." By eliminating barriers posed by traditional narrative medicine formats, RTBR may enhance students' ability to process clinical experiences in a meaningful way and maximize their professional growth.

55) WHEN THE LUNGS AREN'T TO BLAME: A NEUROMUSCULAR TAKE ON RESPIRATORY FAILURE

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Respiratory failure is commonly attributed to obstructive or central causes, but patients with neuromuscular disease may present with a complex interplay of underlying etiologies (1). This case highlights the diagnostic and therapeutic challenges of multifactorial respiratory compromise in a medically complex patient.

A 55-year-old male with a history of Becker muscular dystrophy (BMD), wheelchair use, chronic pain managed with methadone, and extensive tobacco use presented with several days of chest pain, shortness of breath, new-onset hypoxia, and lower extremity edema. Initial workup revealed polycythemia, elevated brain natriuretic peptide, and chronic hypercarbic respiratory failure. Chest imaging demonstrated ground-glass opacities without consolidation. A transthoracic echocardiogram showed preserved left ventricular ejection fraction (60%) but reduced right ventricular systolic function raising concern for right heart dysfunction and possible pulmonary hypertension.

Despite treatment with bronchodilators, steroids, and diuretics, pCO□ remained critically elevated prompting bilevel positive airway pressure (BiPAP) initiation. Pulmonology evaluated the patient and noted overlapping causes for both chronic hypercarbic and acute (although potentially chronic) hypoxic respiratory failure. Pulmonary function tests revealed a borderline obstructive pattern and reduced maximal inspiratory pressure, supporting respiratory muscle weakness as a key contributor. Identifiable contributing factors included restrictive chest wall mechanics due to neuromuscular weakness and immobility, possible obstructive sleep apnea (OSA), central sleep apnea (related to chronic methadone use), obesity hypoventilation syndrome, the question of respirator bronchiolitis-interstitial lung disease on subsequent CT imaging, and underlying obstructive pulmonary disease. Polycythemia was suspected to result from chronic hypoxemia, though a recently normal erythropoietin level and negative JAK2 testing suggested a non-classical mechanism (2). This case illustrates the necessity of a broad differential and interdisciplinary evaluation in patients with neuromuscular disease who present with respiratory failure. BMD is an X-linked recessive disorder caused by in-frame mutations in the DMD gene that allow partial production of functional dystrophin. It typically presents with symmetric, proximal muscle weakness in adolescence or early adulthood with many individuals remaining ambulatory into midlife (3).

While skeletal involvement in BMD is often mild, respiratory complications can be insidious and progressive, especially in patients with significant immobility. Over time, diaphragmatic weakness and restrictive physiology contribute to hypoventilation, hypercapnia, and increased risk for respiratory failure—particularly when compounded by other factors such as sleep-disordered breathing, opioid use, or obesity.

Cardiac involvement is another major source of morbidity and mortality in BMD and is often independent of the degree of skeletal muscle weakness. Myocardial fibrosis typically begins in the posterobasal left ventricular wall and progresses over time (3). Right ventricular dysfunction can occur early, particularly in the setting of pulmonary hypertension or chronic respiratory failure, and may precede or accelerate left ventricular decompensation. Cardiac surveillance is essential even in patients with minimal skeletal symptoms as cardiomyopathy may be the presenting or dominant feature of disease.

The patient was successfully weaned from BiPAP and discharged on home supplemental oxygen, nocturnal BiPAP, and outpatient recommendations including pulmonary follow-up, smoking cessation, and gradual methadone weaning due to risk of central hypoventilation. Recognition of overlapping pathophysiology is essential to tailoring supportive therapies and long-term management.

56) USE OF JANUS KINASE (JAK) INHIBITOR UPADICITINIB IN MICROSCOPIC COLITIS: A CASE REPORT

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Introduction: Microscopic colitis (MC) is a chronic inflammatory disease of the large intestine that typically presents as frequent, non-bloody, watery diarrhea. The condition is thought to result from epithelial dysfunction and an unbalanced immune response and is histologically classified as either collagenous or lymphocytic colitis based on colonoscopic biopsy findings. Budesonide is the first-line treatment. However, chronic steroid use is associated with adverse effects, necessitating safer long-term alternatives. Janus kinase (JAK) inhibitors, approved for moderate-to-severe ulcerative colitis (UC) and Crohn's disease (CD), have limited documentation in the treatment of MC.

Case Presentation: A 64-year-old female with celiac disease and eczema presented with chronic watery diarrhea and was diagnosed with microscopic colitis in September 2016. She began treatment with budesonide 9 mg daily, which improved her diarrhea but led to over 40 pounds of weight gain. The drug was eventually tapered off due to side effects. Over the next several years, she cycled through multiple therapies, including multiple courses of Pepto-Bismol, bile acid sequestrants (e.g., cholestyramine), Entocort, and mesalamine, with only temporary or minimal relief. Tapering budesonide often led to worsening diarrhea. Medication side effects and ineffective treatment significantly impacted her quality of life, with persistent severe diarrhea, frequent nocturnal bowel movements, and fecal urgency.

Despite strict adherence to a gluten-free diet, her symptoms continued. Upadacitinib, a JAK inhibitor, was trialed. This resulted in rapid and sustained improvement in her gastrointestinal symptoms, reducing bowel movements to fewer than three per day, and complete resolution of her lifelong eczema.

Discussion: This case demonstrates the difficulty in managing persistent microscopic colitis and highlights the potential role of JAK inhibitors in select cases. Although JAK inhibitors are not FDA-approved for MC, their success in this patient suggests overlapping immunologic pathways between MC and other inflammatory bowel diseases, where the JAK-STAT signaling pathway is the main immune modulation pathway. The concurrent improvement of her eczema, an indication already approved for JAK inhibitor therapy, may suggest a systemic therapeutic benefit.

Conclusion: This case supports the potential off-label use of JAK inhibitors, such as upadacitinib, in patients with refractory microscopic colitis. It highlights the need for individualized care and the exploration of novel therapies when standardized treatments fail. Further research is necessary to determine the efficacy and safety of JAK inhibitors in MC and to better define their role in treatment-resistant cases.

57) MAY-THURNER SYNDROME AND THERAPEUTIC CHALLENGES IN DEEP VEIN THROMBOSIS: A CASE REPORT AND REVIEW OF MANAGEMENT CONSIDERATION

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Deep vein thrombosis (DVT) is a multifactorial vascular phenomenon with both provoked and unprovoked etiologies. In select patients, anatomical variants such as May-Thurner Syndrome (MTS), which is characterized by compression of the left common iliac vein by the right common iliac artery, can complicate the diagnosis, management, and long-term outcomes. Standard management often consists of endovascular stenting and anticoagulation; however, recurrence, stent failure, and bilateral or inferior vena cava (IVC) involvement can complicate and challenge these paradigms. Clinical guidelines on long-term treatments remain limited in this population.

We present a case of a 59-year-old woman with known MTS who developed extensive, right lower extremity DVT and IVC involvement following discontinuation of long-term fondaparinux. She has a history of prior left iliac vein stenting and IVC filter placement due to recurrent left lower extremity DVT, as well as therapeutic failure on enoxaparin. Imaging confirmed right-sided occlusive thrombus extending to the IVC and a non-occlusive chronic thrombus in the previously stented left iliac system. She underwent successful bilateral thrombectomy and thrombolysis, followed by resumption of fondaparinux and aspirin. She reported improved symptoms at follow-up, at which time, lifelong anticoagulation was also advised.

This case underscores the complexity of managing unprovoked, recurrent DVT in the setting of MTS, particularly when bilateral and central venous systems are involved. Stent failure or thrombosis despite previous interventions can highlight the potential need for indefinite anticoagulation and close imaging surveillance. The use of fondaparinux illustrates a viable long-term strategy, particularly due to its favorable pharmacokinetics and low risk of heparin-induced thrombocytopenia. However, evidence remains sparse for its role in chronic MTS management and other anatomical variants.

This case illustrates the therapeutic challenges inherent in managing DVT complicated by MTS and prior stenting. It emphasizes the need for individualized, often lifelong anticoagulation strategies, vigilance for bilateral propagation, and the potential for IVC involvement. The absence of specific guidelines in this subgroup reveals a pressing need for targeted research to optimize outcomes and define best practices in patients with anatomically predisposed, recurrent thrombotic disease.

58) HOCUS-POCUS: INCIDENTAL PNEUMATOSIS INTESTINALIS FOUND ON POINT-OF-CARE ULTRASOUND

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Introduction: Small bowel obstruction (SBO) is a common condition with the potential to become life-threatening and require immediate surgical intervention. Diagnosis and management are most often dictated by computed tomography (CT) in stable patients, while point-of-care ultrasound (POCUS) is often used in unstable or resource-limited settings. Pneumatosis intestinalis, gas or free air within the bowel wall or mesenteric veins, is a rare but serious finding which can be associated with severe SBO. We present a case in which SBO was incidentally identified on POCUS performed for paracentesis, underscoring its diagnostic utility beyond procedural guidance.

Case Presentation: A 50-year-old female with a past medical history significant for metastatic cecal cancer with peritoneal and lung metastases complicated by multiple prior instances of malignant ascites requiring biweekly paracenteses not on treatment was evaluated for nausea, vomiting, constipation, and abdominal pain. Patient had notably been seen three times in clinic over the week prior to admission for similar concerns with workup findings consistent with recurrent large volume ascites. At time of presentation, she was hemodynamically stable. Abdominal exam was significant for periumbilical tenderness but otherwise soft without guarding. Labs were notable for hyponatremia, transaminitis, hyperbilirubinemia, leukocytosis, and thrombocytosis. KUB imaging demonstrated non-obstructive bowel gas pattern and RUQ US with cirrhotic changes and stable intrahepatic biliary and CBD dilatation. Given poor oral intake and worsening abdominal distension, the patient was admitted. Over the first few days of admission, the patient became increasingly lethargic with new onset tachycardia and tachypnea and no bowel movements despite suppository and enema, raising concern for tense ascites versus bowel obstruction. Repeat KUB showed significantly dilated bowel/esophagus with air fluid levels. Bedside Procedure Service was consulted for a routine therapeutic paracentesis. During pre-procedure POCUS, markedly dilated small bowel loops with intramural echogenic foci consistent with pneumatosis intestinalis were visualized, suggestive of a severe SBO. Nasogastric decompression was initiated with significant relief. Subsequent CT imaging confirmed high-grade SBO with several relative caliber transition points, portal venous gas, and pneumatosis. Patient was not a surgical candidate; broad spectrum antibiotics were started given concerns for sepsis and patient was transferred to the ICU for further management.

Discussion: While CT remains the gold standard for diagnosing SBO, this case highlights the significant adjunctive role of POCUS, especially in the acute care setting. Bedside ultrasound allowed for early detection of a severe SBO complication, pneumatosis intestinalis, prior to formal imaging, and therefore expediting clinical decision-making. POCUS offers a rapid, accessible, and non-radiating modality that can aid diagnosis when time is critical. Broader application of POCUS in evaluating abdominal distension, even in the context of procedural planning, may improve diagnostic efficiency and patient outcomes.

59) CASE OF ANAPLASMOSIS CAUSING A FEBRILE SEIZURE, BICYTOPENIA, PSOAS HEMATOMA

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Introduction: Anaplasmosis is an emerging tick-borne disease impacting both humans and animals. It is caused by Anaplasma phagocytophilum, an obligate-intracellular bacteria, and is transmitted most commonly by the bite of Ixodes ticks. Infections are often asymptomatic but may also present with a wide range of clinical manifestations. These mostly commonly include fever, malaise, myalgias, and headache. Less than one-half symptomatic cases require hospitalizations due to severe presentation, with 3-7% having life-threatening complications, such as respiratory insufficiency, septic shock, multi-organ failure, or rarely nervous system involvement. Rapid first line treatment with doxycycline has been shown to be efficacious. Here we present a case of Anaplasmosis that resulted in febrile seizure, thrombocytopenia, and psoas hematoma.

Case: An 84-year-old female with history significant for osteoporosis and appendectomy for perforated appendicitis presented to the emergency department after being found unresponsive, shaking, and drooling. She had been seen earlier that same day in her usual state of health and had not had any infectious symptoms or recent travel. Upon arrival, emergency medical services (EMS) noted that patient was having generalized tonic-clonic shaking with right gaze deviation. She was given midazolam with resolution of seizure-like activity. Upon ED arrival, she was unresponsive and was intubated for airway protection. She was otherwise noted to be febrile to 102.5F and tachycardic to 116 with labile pressures. Initial lab work-up was notable for lactic acidosis, leukopenia, and thrombocytopenia (bicytopenia) requiring platelet transfusion. Given the finding of bicytopenia, a tick-borne panel was sent out. She was started on broad spectrum antibiotics (vancomycin and ceftriaxone) and acyclovir and admitted to the MICU for further management. Her initial broad infectious work-up - including lumbar puncture, brain MRI, and urine drug screen – were unremarkable. Continuous EEG showed no seizure activity. CT CAP revealed a right intramuscular psoas hematoma with a focus of extravasation and new pulmonary embolism. The patient was eventually extubated but continued to have waxing and waning mentation and ongoing fevers up to 102-103 despite broad spectrum antibiotic coverage. During a patient interview, it was discovered that the patient often off-road hiked and regularly pulled off ticks. Peripheral blood smear was consistent with anaplasmosis. Her tick-borne panel later returned positive for anaplasma phagocytophilum. Per infectious disease consult, the patient was switched from vancomycin and ceftriaxone to doxycycline resulting in resolution of fevers and thrombocytopenia as well as improved mentation.

Discussion: We present a case of an atypical presentation of Anaplasmosis resulting in febrile seizure, bicytopenia, and psoas hematoma. Though Anaplasmosis typically presents as weakness, malaise, headache, myalgia, arthralgia, nausea, and vomiting or even asymptomatically, the possibility of life-threatening presentations and complications necessitate rapid identification and therapy initiation if a patient presents with signs and symptoms consistent with infection and an appropriate epidemiologic setting, particularly in elderly patients given their higher incidence and risk for rare life-threatening complications. This case represents the importance of early suspicion of and testing for tick-borne illness in patients presenting with bicytopenia in endemic regions.

60) FEVER IN THE RETURNING TRAVELER: DENGUE IN WISCONSIN AND THE INDISPENSABLE ANALOGUE OF A SAGE HISTORY AND PHYSICAL EXAM

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Background: Fever in the returning traveler is a clinically significant presentation, often serving as the sole harbinger of a potentially life-threatening infection or epidemiological crisis. The emergence of novel pathogens expanding endemic regions underscores the need for clinicians to remain alert to emerging infectious diseases. The quality and efficiency of their diagnostic reasoning is irreplicable if scaffolded by a thorough history and physical exam. Here we present a case of Dengue in a patient presenting with fever in a returning traveler.

Case: A 58-year-old male presented to the emergency department with a 48-hour history of nausea, diarrhea, headache, and fever roughly 24 hours after returning from a 14-day trip to the Philippines. Additional symptoms included a retro-orbital headache and erythematous rash across his chest, initially appraised as sunburn. He described staying in a small village 3 hours north of Manilla as well as a nearby beach resort. He noted eating at street markets and petting stray dogs who would enter the resort. He denied using mosquito precautions like insect repellent or netting. Several of his family members began experiencing similar, generalized, reportedly self-limited symptoms during their trip. Upon arrival, his workup revealed neutropenia (ANC < 500 K/uL) and thrombocytopenia (95 K/uL) but otherwise normal complete metabolic panel. Infectious disease was consulted and recommended additional studies including Anaplasma spp., Ehrlichia spp., Babesia spp., Lyme, Chikungunya, Malaria, Leptospira spp. and Dengue Fever panel, in addition to blood cultures, urinalysis and cultures, and EBV, HIV A/B, CMV, Hepatitis A and B, as well as gastrointestinal and respiratory BioFire panels. He received supportive care with intravenous fluids and acetaminophen. He was started on broad spectrum antibiotics, including doxycycline. His hospital course was uneventful, and his symptoms improved. He was discharged on a 10-day course of doxycycline. One week after discharge, his workup revealed a positive Dengue Fever serum IgM Antibody of 5.37 K/uL (N < 1.65), representing a recent infection consistent with his exposure history, clinical presentation, and laboratory abnormalities.

Discussion: An approach to fever in a returning traveler begins with appropriate risk stratification to rule-out severe etiologies. The differential diagnosis for fever in the returning traveler can be reduced substantially by identifying exposures, attending to incubation periods and regional endemicity, and correlating evidence to the clinical presentation and laboratory findings. For Dengue fever, the timing and character of clinical manifestations are essential for diagnosis and expedited management. Our patient met the 2009 WHO Criteria for Dengue without warning signs given his exposure history, accompanied by fever, nausea/vomiting, maculopapular rash, retroorbital pain, myalgia, arthralgia, and leukopenia occurring after a 3-day incubation and lasting 10 days through febrile and recovery phases. Confirmatory testing includes serology or PCR. Management is ultimately supportive, given no antiviral therapy exists. However, prevention is critical and includes mosquito control and vaccination (e.g., CYD-TDV and TAK-003). While the evolving epidemiology of travel-related fever underscores the need for clinicians to remain alert to surveillance of emerging pathogens, sage diagnostic reasoning is ultimately and irreplaceably scaffolded by a thorough history and physical exam.

61) WHEN GUIDELINES DON'T EXIST: A CASE REPORT OF HEMODIALYSIS FOR MANAGEMENT OF LAMOTRIGINE OVERDOSE

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Introduction: Lamotrigine is an anti-epileptic agent commonly used to treat seizures, depression, and bipolar mood disorder. While generally a well-tolerated medication with minimal long-term side effects, lamotrigine can cause central nervous system depression, encephalopathy, seizure, cardiac arrhythmia, and rhabdomyolysis if ingested in large quantities. Currently, there is no consensus on the most effective intervention for lamotrigine overdose: treatment options range from supportive care through vitals monitoring to extracorporeal therapies like hemodialysis.

Case Presentation: A 30-year-old male with a history of bipolar disorder presented to the emergency department following ingestion of 8 grams of lamotrigine. On admission, serum lamotrigine concentration was 25.6 ug/mL (reference range: 2.0 – 20.0 ug/mL), and creatine kinase was 308 U/L (reference range: ≤ 190 U/L). Urine drug screen was negative. While in the ED, the patient presented with severe abdominal pain, spontaneous vomiting, tachypnea, sinus tachycardia on EKG, increasing agitation, and non-epileptic tremulous activity. He subsequently became altered, lethargic, and apneic, requiring endotracheal intubation. Treatment with activated charcoal lavage and polyethylene glycol were attempted, and IV rifampin (600 mg q24h) was administered to facilitate lamotrigine elimination. However, lamotrigine serum concentration continued to rise despite these interventions, with the highest concentration measured to be 36.9 ug/mL. This measurement, in combination with lab findings consistent with rhabdomyolysis (creatine kinase concentration = 6,852 U/L), prompted nephrology consult for emergent extracorporeal removal of the intoxicant. Two sessions of intermittent hemodialysis were initiated with the goal of clearing encephalopathy or significantly decreasing lamotrigine concentration. Following the second session, lamotrigine concentration returned to a therapeutic range of 17.0 ug/mL. The patient was alert, responded appropriately to commands, and was successfully extubated to room air.

Discussion: This case illustrates the utility of hemodialysis in the management of lamotrigine overdose given rising toxin concentrations, encephalopathy, rhabdomyolysis, and associated kidney injury. The dialyzability of lamotrigine makes extracorporeal treatment a viable therapeutic strategy, particularly in the setting of severe toxicity when conventional methods fail. Further study is warranted regarding the optimal timing of hemodialysis given the ingestion timeline.

62) AN UNEXPECTED PATHOGEN: OPPORTUNISTIC CORYNEBACTERIUM STRIATUM IN CELLULITIS

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INTRODUCTION: Cellulitis is a common bacterial skin infection that occurs when the skin's protective barrier is broken, allowing normal flora or external pathogens to invade the dermis and subcutaneous tissue. The most frequent cause is group A beta-hemolytic streptococcus, which can release virulence factors such as pyrogenic exotoxins and superantigens, leading to more severe and invasive disease. Diagnosis requires two of the following four clinical signs: warmth, erythema, edema, or tenderness. Individuals with co-morbidities such as diabetes mellitus, peripheral artery disease, venous insufficiency, lymphedema, or immunocompromised states are at increased risk. When recognized and treated early with antibiotics, symptoms generally improve within 48 hours. While cellulitis has a favorable prognosis, recurrence is more likely in high-risk populations.

CASE DESCRIPTION: A 71-year-old female with past medical history significant for type 2 diabetes, severe asthma on chronic prednisone, and selective IgG deficiency was admitted for sepsis in the setting of persistent cellulitis of right lower extremity. A month and a half prior, the patient presented to the emergency department (ED) for right knee pain and a below the knee laceration following a ground level fall. She was sutured and discharged home on Keflex. Two days later, she was sent from urgent care to the ED where she was admitted for cellulitis and started on Zosyn and vancomycin. Upon discharge to a rehab facility, she was transitioned to oral Augmentin and linezolid. At the facility, she was subsequently treated for persistent cellulitis of the right lower extremity with doxycycline without improvement in symptoms. The patient presented to the ED the day of discharge from rehab in septic shock. She was started on Zosyn, vancomycin, and clindamycin. Acute care surgery was consulted for persistent fluid of the anterolateral superficial fascia noted on a CT of the tibia/fibula, raising concern for necrotizing fasciitis, which was subsequently ruled out. Advanced radiology procedures were consulted for possible aspiration and culture of fluid. Ultrasound guided attempt did not yield fluid, but a tissue biopsy was obtained which was consistent with necrotic tissue. After 24 hours, blood cultures came back positive for Corynebacterium Striatum. Infectious disease was consulted for antibiotic recommendations while awaiting sensitivities. Zosyn and clindamycin were discontinued while vancomycin was continued. Patient symptoms improved with a 7-day course of vancomycin. She was discharged home on a four-week course of linezolid with a scheduled follow up with infectious disease and repeat CT imaging.

DISCUSSION: C. striatum is a common component of the skin flora and is typically non-pathogenic. However, it can act as an opportunistic pathogen, particularly in immunocompromised individuals. This patient had severe asthma managed by long-term prednisone. While a single positive blood culture for C. striatum can be attributed to contamination, the presence of this organism in both sets of blood cultures, along with clinical findings, supports its role in this patient's cellulitis and bacteremia. Given its potential for multi-drug resistance, early consultation with infectious disease was essential to guide appropriate antibiotic management.

64) PHLEGMASIA IN THE SETTING OF HETEROZYGOUS FACTOR V LEIDEN AND CHRONIC IVC FILTER

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Introduction: Factor V Leiden is an autosomal dominant point mutation and a risk factor for venous thromboembolism; however, many individuals are asymptomatic. Currently, management for heterozygous individuals with history of thrombus is varied. Some studies suggest up to a 1.5-fold increased risk in recurrent venous thromboembolism (VTE) in patients with heterozygous Factor V Leiden compared to controls. Life-long anticoagulation is considered reasonable in patients with prior VTE. Inferior vena cava (IVC) filter placement is considered in patients with VTE who have failed medical anticoagulation therapy. Although there is a known risk for thrombus with IVC filter, retrieval rate of IVC filters is low.

Case Presentation: An 85-year-old male presented to the hospital with worsening bilateral lower extremity edema, weakness and hypotension. His history was significant for a myocardial infarction at age 63 which required coronary artery bypass grafting and was complicated by sternal wound infection, and a deep vein thrombosis/pulmonary embolism while on anticoagulation. He had not been on anticoagulation for the last ~20 years at the time of presentation. ED course was notable for initial hypotension, which resolved with fluid resuscitation. Labs were remarkable for mild anemia, new acute kidney injury and elevated lactate. He underwent CTA abdomen and pelvis which was notable for large expansile thrombus extending from the level of the infrarenal IVC filter through the bilateral common, external, and internal iliac veins, as well as involving the bilateral proximal common femoral veins. His presentation was concerning for phlegmasia due to sudden edema, numbness, coolness and cyanosis associated with possible fluid sequestration that correlates with hypotension and delayed capillary reflex on presentation. A hypercoagulable panel was obtained and heparin drip started on admission. He underwent, balloon venoplasty and mechanical iliocaval thrombectomy of significant acute, subacute and chronic clot by interventional radiology on hospital admission day 2. Post-intervention venography demonstrated marked improvement in central venous blood return from the pelvis though the IVC filter with some residual clot. Patient overall tolerated the procedure well, transitioned from the heparin drip to apixaban on hospital admission day 4. Hypercoagulable panel demonstrated heterozygote Factor V Leiden. The patient was evaluated in the outpatient setting with repeat CTA abdomen and pelvis demonstrating no recurrent clot within the filter or elsewhere within the venous system status post thrombectomy.

Discussion: This case demonstrates the importance of appropriate follow-up and consideration of hypercoagulable work-up in patients who have failed medical anticoagulation to better stratify their risk for recurrent thrombus and need for continued indefinite anticoagulation. Additionally, it serves as a poignant reminder of the iatrogenic consequences of prolonged IVC filter placement. Early signs of phlegmasia include edema, diminished pulses and pain. Cyanosis is an indication of more severe phlegmasia with an associated mortality of up to 40%. High clinical suspicion is needed to prevent catastrophic complications such venous gangrene, compartment syndrome, limb loss and death.

63) EMPYEMA WITHOUT PUS: ATYPICAL PRESENTATION IN AN ELDERLY PATIENT WITH DEMENTIA

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Introduction: Empyema is traditionally defined as the presence of pus in the pleural space, typically resulting from a complication of pneumonia or other infectious process. However, the clinical and diagnostic spectrum of empyema can be broader than its classic presentation. This case highlights an atypical manifestation of empyema in which pleural fluid analysis revealed no gross purulence, and infectious workup did not identify any organism.

Case presentation: An 80-year-old male presented to the emergency department (ED) with complaints of chest tightness, cough, dyspnea, and fever. A complete blood count revealed leukocytosis, and a chest radiograph showed left multi-lobar pneumonia with a left pleural effusion. Hospital admission was recommended; however, the patient's power of attorney (POA) declined due to the patient being a known flight risk (the patient had a history of dementia, and the POA expressed concerns regarding elopement). The patient was discharged on cefdinir and doxycycline.

Five days later, he was seen in the pulmonary clinic, where point-of-care ultrasound revealed a loculated, complex pleural effusion not amenable to thoracentesis. He was advised to return to the ED. This time, both the patient and POA agreed to admission, and he was admitted to the internal medicine service. Cefdinir was discontinued, and the patient was started on ceftriaxone and metronidazole, with doxycycline continued.

Given the sonographic findings, a chest tube was placed for drainage, and daily intrapleural tissue plasminogen activator (TPA)/dornase alfa instillations were initiated. Based on Light's criteria, pleural fluid analysis revealed an exudative effusion (fluid LDH: 2,345). Infectious work up – including sputum culture, acridine orange stain, acid-fast bacilli culture, MRSA screen, and aerobic/anaerobic cultures with grain stain – were negative. However, gram stain of the pleural fluid shower 4+ polymorphonuclear leukocytes, and sputum culture grew 3+ mixed flora. Given the patient's history of dementia and his sputum findings, the empyema was presumed secondary to aspiration pneumonia.

The chest tube remained in place for one week and drained over 4.5 liters of fluid. Pulmonology, consulted for chest tube management and lytic therapy, classified the effusion as an empyema despite the absence of visible pus. Infectious disease was consulted for outpatient antibiotic management and recommended a four-week course of oral amoxicillin-clavulanate following discharge.

At the time of discharge, the patient's leukocytosis had resolved, he was asymptomatic and was breathing comfortably on room air. A follow-up chest radiograph showed a marked interval decrease in the size of the pleural effusion.

Discussion: This case highlights a unique presentation of empyema in the absence of visible pus or an identified organism. However, the presence of a complex, loculated effusion, gram stain and sputum culture results, and clinical improvement with drainage and antibiotics supported the diagnosis. The patients prior antibiotic use prior to admission likely contributed to the negative infectious workup. This case exemplifies that the absence of purulence does not exclude empyema, and that the diagnosis must rely on a comprehensive clinical assessment.

65) WHEN CANCER BECOMES A CHRONIC DISEASE

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Background: Cancer has become a chronic disease for many patients diagnosed with leukemia, lymphoma and increasingly Stage 4 solid tumors. Relapsed breast and prostate cancers are commonly managed as chronic conditions thanks to the availability of targeted therapies informed by molecular testing, but increasingly patients with other solid tumors such as ovarian, renal cell, and follicular thyroid cancer are living longer with targeted therapy.

Tyrosine kinase inhibitors targeting VEGFR, MET, and KIT, act by blocking angiogenesis and have indications for multiple cancers including follicular thyroid carcinoma. GI side effects including diarrhea, decreased appetite, and weight loss are common. Elevated liver enzymes occur in 5-12% of patients using Lenvatinib and >30% on Cabozantinib. Acute hepatitis is rare and occurs in <1% of patients. Nivolumab is monoclonal antibody that works by blocking PD-1 receptors and is also known to cause similar side effects. This case highlights the importance of balancing concerns about treatment related toxicity and efficacy and how management of hepatotoxicity posed a particular challenge for a patient with metastatic follicular thyroid cancer.

Case Presentation: A 67-year-old male with follicular thyroid carcinoma was started on Lenvatinib for management of metastatic disease. Over the course of his four-year treatment with Lenvatinib, the dose was adjusted multiple times in response to side effects including diarrhea and weight loss. Transaminitis occurred six times with AST, ALT, and ALK PHOS levels as high as 581U/L, 710U/L, and 278U/L. Each time, the medication was held for a few days with improvement. Eventually the therapy was discontinued due to disease progression including new bone lesions. The patient next received Cabozantinib, 60mg daily, for three-months. Transaminitis developed again with the highest AST, ALT, and ALK PHOS levels of 254U/L, 278U/L, and 195U/L. During this time, hepatology was consulted. Evidence of disease progression and a liver biopsy confirming Cabozantinib-induced liver injury led to its discontinuation. The patient was next started on Nivolumab at a dose of 240mg every two weeks. Over the next two years he experienced episodes of transaminitis with the highest AST, ALT, and ALK PHOS levels of 626U/L, 1104U/L, and 521U/L. Prednisone was started and eventually Cellcept was added to manage drug induced liver injury. When the disease progressed, radiation was used to avoid increasing the dose. Once the liver enzymes normalized, the patient restarted his current regimen of Nivolumab 40mg every three weeks. He currently has stable disease and tolerates the therapy.

Discussion/Conclusion: This patient benefited from a customized approach to his cancer therapy. The team found a solution that stabilized the patient's cancer and preserved his liver. After trying two tyrosine kinase inhibitors, the off-label use of Nivolumab, an immunotherapy agent, gave the patient another chance. Management of Nivolumab-induced hepatotoxicity with Prednisone and Cellcept allowed additional solutions beyond holding the medication when experiencing transaminitis. Cancer is becoming a chronic condition that requires perseverance and creativity to effectively control the cancer and manage adverse effects of treatment.

66) ANAPLASMOSIS AS AN UNUSUAL CAUSE OF PERICARDIAL EFFUSION: A CASE REPORT

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Anaplasmosis, caused by the bacteria Anaplasma phagocytophilum, is one of the most common tick-borne illnesses in Wisconsin. While Lyme disease is more commonly associated with cardiac complications, myopericarditis and pericardial effusions have been reported as rare complications of anaplasmosis.

A 70-year-old man with a previously demonstrated pericardial effusion on CT imaging six months prior presented to the emergency department with a four-day history of systemic symptoms including fevers, chills, weakness, vomiting, joint pains, myalgias, and headache as well as tachycardia despite fluids and plethoric IVC. He recalled removing a tick from his back, noting a bull's-eye lesion 2-3 weeks prior. The electrocardiogram showed sinus tachycardia with PACs and low voltage QRS. Initial Lyme serology IgM was positive. Initial laboratory findings also included thrombocytopenia, hyponatremia, hyperbilirubinemia, lactic acidosis, elevated CRP, and elevated d-dimer (PE ruled out with CTPE). Later, the patient was found to be positive for Anaplasma phagocytophilum on PCR. Transthoracic echocardiogram demonstrated moderate to large pericardial effusion, with fluid noted adjacent to right-sided chambers along with echocardiographic signs of tamponade including right ventricular diastolic collapse, right atrial wall inversion, respiratory variation of valve inflows, IVC dilation and tachycardia. Therefore, the patient underwent emergent pericardiocentesis with removal of 550cc of straw-colored fluid, and a pericardial drain was placed. Subsequent testing of the pericardial fluid was positive for Anaplasma phagocytophilum and negative for Borrelia. The pericardial drain was able to be removed on post-procedure day two. He recovered with doxycycline and was discharged with 3 months of colchicine and an ibuprofen taper with plan for repeat TTE in 2 weeks.

This case illustrates pericardial effusion as a potential serious complication of anaplasmosis infection. In the case of this patient, the anaplasmosis infection was likely the insult that worsened his previously demonstrated pericardial effusion to become concerning for tamponade physiology. Prompt intervention and treatment with appropriate antibiotics allowed this patient to have a good outcome with recovery to his prior baseline. Although relatively rare, potential cardiac involvement remains an important consideration for suspected and confirmed cases of anaplasmosis and other tick-borne illnesses.

67) PITUITARY METASTASIS WITH CRISIS: A RAPIDLY PROGRESSIVE CAUSE OF SHOCK

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Introduction: Pituitary metastases are a rare but important clinical entity, representing less than 1% of surgically treated sellar masses, most commonly from breast and lung cancers. These lesions are often mistaken as benign and can emerge suddenly with symptoms related to both mass effect and pituitary hormone deficiencies.

Case Presentation: A 69-year-old man with a history of prostate, bladder, and right upper lobe non-small cell lung cancer (NSCLC), all treated with curative intent, was brought to the Veterans Affairs (VA) emergency department (ED) by his wife due to worsening confusion, persistent headaches, fatigue, diplopia, decreased appetite, and weight loss. Previous outpatient evaluation was notable for an incidentally discovered mass presumed to be a pituitary macroadenoma. Initial vitals were notable for hypotension and tachycardia, which improved with fluids, and magnetic resonance imaging (MRI) was obtained, showing a suprasellar mass causing effacement of the optic chiasm with extension to the cavernous sinus. Physical exam revealed bitemporal hemianopsia. Patient was admitted to the hospital and developed further hypotension refractory to fluids but rapidly stabilized with IV hydrocortisone. Laboratory results revealed low thyroid-stimulating hormone (TSH), free thyroxine (T4), luteinizing hormone (LH), follicle-stimulating hormone (FSH), testosterone, and elevated prolactin. Hospital course was complicated by delirium, intractable headaches, and polyuria and polydipsia, reaching 14 liters of fluid intake and 12 liters of urine output per day. Mild hypernatremia with low urine osmolality were consistent with arginine vasopressin deficiency and desmopressin was initiated with clinical improvement. Endocrinology, Oncology, Ophthalmology, and Neurosurgery were consulted given the rapid clinical progression and initial MRI characteristics of the mass concerning for malignancy. Repeat MRI two weeks after admission showed interval tumor growth and the patient was transferred for expedited surgical intervention, undergoing endoscopic endonasal partial resection and biopsy of the mass by neurosurgery and otolaryngology. Pathology revealed metastatic, poorly differentiated carcinoma. Immunohistochemistry favored a non-small cell lung carcinoma origin, without evidence of prostatic, urothelial, or colorectal differentiation.

Discussion: This case highlights the importance of considering metastatic disease in rapidly progressive sellar lesions, even in patients with presumed cancer remission. In patients with known cancer and new neurologic or endocrine changes, pituitary involvement should be considered early. Common presenting features include headache and vision changes from mass effect. Hypopituitary symptoms from most to least frequently reported include adrenal insufficiency (71%), hypothyroidism (65%), and diabetes insipidus (26%). The Endocrine Society recommends immediate glucocorticoid replacement in suspected adrenal crisis, followed by tailored hormonal therapy. Abrupt onset of panhypopituitarism and diabetes insipidus, coupled with mass effect symptoms, should prompt urgent endocrine and surgical evaluation.

68) A CASE OF IMMUNE CHECKPOINT INHIBITOR-ASSOCIATED MYOCARDITIS IN A METASTATIC BREAST CANCER PATIENT

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Introduction: Immune checkpoint inhibitors (ICIs) are an effective drug class used in many malignancies. However, they are also associated with potentially catastrophic side effects. ICI-associated myocarditis is a rare but life-threatening condition with an estimated mortality rate up to 50%.

Case Presentation: A 54-year-old woman with a history of metastatic breast carcinoma diagnosed in 2014 treated with pembrolizumab and trastuzumab presented to the emergency department with progressive exertional dyspnea for the last two weeks. Echocardiogram on the first day of admission showed moderate systolic dysfunction with an estimated left ventricular ejection fraction (LVEF) of 30-34%. Cardiac MRI was also suggestive of myocarditis. The decision was made to start treatment per the AHA guidelines beginning with recommended high-dose corticosteroids (1 g methylprednisolone daily for three days followed by prednisone taper). This initially showed promising results, with troponin level falling nearly 50% to 1,134 ng/L on her first day after admission. However, troponin levels remained largely unchanged during the remaining methylprednisolone course, so mycophenolate was added. The patient then began to experience new encephalopathic symptoms and mycophenolate was discontinued. Repeat echocardiogram at this time showed worsening left ventricular systolic function (LVEF 25-29%). Given the concern for refractory myocarditis, abatacept was administered. Altered mental status resolved and troponin values improved steadily over the next several days. Eventually, the patient was discharged on day 13 of hospitalization with TTE showing significantly improved LVEF of 46-49%.

Discussion: Despite the severity of ICI-associated myocarditis, the data on treatment remains lacking. This patient was treated as recommended by the AHA guidelines with an initial course of 1 g methylprednisolone for three days followed by a 1 mg/kg oral prednisone taper with limited success. The guidelines also include several options for cases of myocarditis refractory to glucocorticoids such as IVIG, mycophenolate, infliximab, plasmapheresis, abatacept, etc. However, there is limited information on which immunosuppressants have the most favorable outcomes with only anecdotal evidence. As seen in this case, mycophenolate was not tolerated by the patient while abatacept resulted in rapid recovery of left ventricular systolic function upon initiation. More research is needed to determine which immunosuppressants truly provide benefit.

This case also shows the potential for abatacept as a first-line treatment for steroid-refractory ICI-associated myocarditis. In addition to our findings, other case reports and series have also reported efficacy of abatacept in treating patients with ICI-associated myocarditis. There has also been success in mouse models using abatacept to treat ICI-associated myocarditis. Enough interest has been generated on this topic that a Phase III clinical trial is currently active to investigate abatacept as a potential solution.

In conclusion, ICI-associated myocarditis has potential catastrophic consequences and is difficult to diagnose and treat. Physicians treating ICI-associated myocarditis need to be flexible with their treatment plan and consider shifting strategy if one specific agent is not working. While more data will have to be collected before it can be established as definitively effective, it is worth keeping abatacept in mind when presented with cases of ICI-associated myocarditis that cannot be controlled with steroids.

69) PELVIC MASS DISCOVERED TO BE A SECOND UTERUS: A CASE OF A COMPLEX MÜLLERIAN ANOMALY

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Background: Uterine didelphys is a rare Müllerian duct anomaly resulting in two separate uteri with two cervices and with or without a vaginal septum. This report discusses a case of remote uterine didelphys with unique anatomical features discovered during hysterectomy.

Case Report: A 54-year-old female, gravida 0, with a history of right lower limb amputation secondary to "congenital anatomic abnormality" (records unknown), presented to gynecologic oncology for evaluation of a growing, complex, right lower quadrant mass on imaging. Her only symptoms were chronic constipation and remote vaginal spotting. She had a significant right ventral wall hernia, present since childhood. The patient elected for a hysterectomy with bilateral salpingo-oopherectomy. In the operating room, one uterus and cervix with a left fallopian tube and ovary were removed, and the right ovary and fallopian tube initially appeared congenitally absent. The right lower quadrant mass, located along the pelvic sidewall within the ventral hernia, was dissected and found to be a second uterus and cervix with a right ovary. The second cervix ended in a blind vaginal pouch extending retroperitoneally, and a remnant of the right round ligament traveled about 7cm to both uteri. This was confirmed by pathology, which showed two distinct endometria.

Conclusion: This case presents a previously undescribed and exceedingly rare variant of uterine didelphys, associated with a right lower limb congenital abnormality. The unexpected nature of this patient's presentation highlights the importance of approaching complex cases with an appreciation for the abundantly wide variety of anatomical variants that exist.

70) REACTIVE INFECTIVE MUCOCUTANEOUS ERUPTION IN A YOUNG ADULT MALE FOLLOWING MYCOPLASMA INFECTION

Sean Rodriguez; Paola Fernandez Soto, MD; Pinky Jha, MD, MPH, FACP
Medical College of Wisconsin, Milwaukee, Wisconsin

Introduction: Sweet syndrome (SS) is an acute febrile neutrophilic dermatosis characterized by the sudden onset of painful, erythematous papules or plaques, often accompanied by fever and leukocytosis. While frequently associated with hematologic malignancies, SS may also occur in the setting of solid tumors, infection, or drug exposure. Previous literature has outlined the clinical subtypes of SS and differences in epidemiology and laboratory findings between them. However, the application of diagnostic criteria when patients present with systemic inflammatory signs and laboratory abnormalities that can be explained by infection or cancer-related inflammation remains inadequately studied. We present a case of SS in a patient with clinical and laboratory findings suggestive of infection.

Case Presentation: A 69-year-old white male with a history of metastatic squamous cell carcinoma (SCC) of the floor of mouth, chronic obstructive pulmonary disease, and pulmonary Mycobacterium avium complex presented with weakness, dyspnea, cough, and loose stools. He had recently completed a course of amoxicillin and was diagnosed with COVID-19 during a prior admission. On presentation, he was cachectic, tachycardic, and noted to have tender vesicular lesions over the dorsal surfaces of both hands. Laboratory testing revealed marked leukocytosis with 90% neutrophils, elevated procalcitonin, and elevated lactic acid, raising initial concern for bacterial sepsis. Chest imaging showed no new findings, and the infectious workup was negative. Dermatology was consulted, and a punch biopsy of the first metacarpophalangeal joint confirmed neutrophilic dermatosis consistent with SS. Given the absence of infectious findings and a histologic diagnosis, the patient was started on clobetasol ointment twice daily. Over two weeks, the lesions flattened into bullae and resolved without the need for systemic corticosteroids. He was discharged in stable condition with outpatient Onco-Dermatology follow-up.

Discussion: This case demonstrates an atypical presentation of SS in a patient with solid tumor malignancy and lab values concerning for infection. While SS is often associated with hematologic disease, its occurrence in head and neck SCC is rarely reported. Additionally, the dorsal hand distribution seen in this case is a recognized but uncommon variant that may mimic cellulitis or drug eruptions. Procalcitonin and lactic acid, typically used to evaluate sepsis, were elevated but ultimately non-contributory. Early biopsy was essential for establishing the diagnosis and avoiding unnecessary antimicrobial escalation.

Conclusion: Clinicians should include SS in the differential diagnosis for vesiculopustular eruptions in immunocompromised patients, even when systemic signs suggest infection. This case emphasizes the diagnostic importance of skin biopsy and the need for awareness of SS variants such as dorsal hand involvement. Future research should aim to identify clinical or biomarker profiles that distinguish between idiopathic, infectious, and paraneoplastic subtypes, particularly in patients with concurrent solid tumors.

71) MORE THAN INFECTION: SWEET SYNDROME IN A PATIENT WITH HEAD AND NECK MALIGNANCY

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Introduction: Sweet syndrome (SS) is an acute febrile neutrophilic dermatosis characterized by the sudden onset of painful, erythematous papules or plaques, often accompanied by fever and leukocytosis. While frequently associated with hematologic malignancies, SS may also occur in the setting of solid tumors, infection, or drug exposure. Previous literature has outlined the clinical subtypes of SS and differences in epidemiology and laboratory findings between them. However, the application of diagnostic criteria when patients present with systemic inflammatory signs and laboratory abnormalities that can be explained by infection or cancer-related inflammation remains inadequately studied. We present a case of SS in a patient with clinical and laboratory findings suggestive of infection.

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Discussion: This case demonstrates an atypical presentation of SS in a patient with solid tumor malignancy and lab values concerning for infection. While SS is often associated with hematologic disease, its occurrence in head and neck SCC is rarely reported. Additionally, the dorsal hand distribution seen in this case is a recognized but uncommon variant that may mimic cellulitis or drug eruptions. Procalcitonin and lactic acid, typically used to evaluate sepsis, were elevated but ultimately non-contributory. Early biopsy was essential for establishing the diagnosis and avoiding unnecessary antimicrobial escalation.

Conclusion: Clinicians should include SS in the differential diagnosis for vesiculopustular eruptions in immunocompromised patients, even when systemic signs suggest infection. This case emphasizes the diagnostic importance of skin biopsy and the need for awareness of SS variants such as dorsal hand involvement. Future research should aim to identify clinical or biomarker profiles that distinguish between idiopathic, infectious, and paraneoplastic subtypes, particularly in patients with concurrent solid tumors.

72) DIAGNOSTIC UNCERTAINTY OF ENCEPHALOPATHY IN A CASE OF SUSPECTED POLYARTERITIS NODOSA

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Background: Polyarteritis Nodosa (PAN) is a medium-sized vessel vasculitis that can impact almost any organ, and presentation is highly variable. Here is a case of a patient who presented with acute encephalopathy and nonconvulsive status epilepticus (NCSE) in the context of suspected PAN.

Case: A 70-year-old female with a PMH of suspected PAN, rheumatoid arthritis, and anxiety presented to an outside hospital with acute onset of erratic behavior, paranoia, and delusions. Prior diagnosis of PAN was suspected due to multisystem organ involvement, including elevated CK, non-bloody diarrhea, HFrEF, and potential renal involvement. She had received 2 infusions of cyclophosphamide and was undergoing a taper from high dose prednisone to treat PAN.

Over the 2 days following admission, her mental status spontaneously improved, and she was discharged home but returned with hypoactive mental status changes consistent with NCSE on EEG. She transiently improved after 2 g levetiracetam and 2 mg lorazepam but became unresponsive again, requiring intubation and transfer to the ICU. She underwent extensive workup that was unrevealing for structural, metabolic, infectious, and toxic causes of encephalopathy. Paraneoplastic processes were also considered but thought to be unlikely, as comprehensive imaging did not reveal malignancy. Her hemodynamics and mental status improved, allowing for extubation and transfer to UW for further evaluation of encephalopathy and presumed PAN.

At UW, she was evaluated by neurology, rheumatology, and psychiatry. Differential diagnosis at this time included cerebral involvement of PAN, steroid-induced encephalopathy, and cyclophosphamide-induced psychosis. She underwent MRA of the abdomen and pelvis and the head and neck, which did not show evidence of active vasculitis. She also underwent a thorough rheumatologic workup that did not suggest alternative vasculitides, although biopsy was not pursued during this admission. Cyclophosphamide was considered as an etiology though no case reports were found that document acute psychosis as a side effect. Additionally, no further seizures were identified during her stay. Given the unrevealing workup, steroid-induced encephalopathy was suspected as the most likely etiology, and she was started on olanzapine 2.5 mg while she continued her prednisone taper. Her mental status continued to improve throughout hospitalization, and she was discharged home with the plan for outpatient follow-up.

Discussion: Here we highlight a case of encephalopathy with undetermined etiology in the context of suspected PAN. Due to this patient's unique presenting symptoms and largely unrevealing workup, the etiology of encephalopathy remained uncertain. Diagnosis of PAN also remained uncertain. While PAN can be suggested by clinical and radiographic findings, it should be confirmed with biopsy of an affected organ, which was not pursued during this admission because there were no clear organs to target. Additionally, previous biopsies that did not show vasculitis were taken less than a month prior to admission.

Steroids are a known cause of encephalopathy and psychosis, and this case highlights the challenges of diagnosis and treatment of encephalopathy in patients who have suspected PAN. There are significant risks associated with forgoing prednisone and leaving PAN untreated, which emphasizes the importance of shared decision-making in cases with diagnostic uncertainty.

73) UNMASKING AIRWAY VULNERABILITY: A CASE OF SUBGLOTTIC STENOSIS IN AN ADULT WITH RSV AND COMORBIDITIES

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Background/Introduction: Respiratory syncytial virus (RSV) is typically associated with mild illness in healthy adults, with severe disease mostly seen in infants, the elderly, or immunocompromised individuals. Subglottic stenosis (SGS), often a pediatric condition or post-intubation complication, is rarely reported in younger adults following viral infections. However, metabolic comorbidities such as diabetes and hypertension may impair mucosal healing and increase susceptibility to airway injury. This case highlights a rare presentation of post-intubation SGS in a younger adult following RSV infection, underscoring the need for heightened clinical vigilance and reconsideration of risk-based preventive strategies.

Case Presentation: A 42-year-old woman with type 2 diabetes, hypertension, and a history of bronchitis presented with four days of worsening shortness of breath, productive cough, and chest tightness. Vitals revealed tachycardia and severe hypertension; labs showed elevated BNP, troponin, and creatinine, alongside microcytic anemia. Imaging revealed left-sided airspace opacities, and RSV was identified as the sole pathogen via PCR. Despite initial oxygen stability, she rapidly progressed to hypoxic respiratory failure requiring intubation. She experienced three failed extubations, each complicated by stridor and hypoxia, ultimately leading to tracheostomy on day 17. Imaging and laryngoscopy later confirmed SGS secondary to post-intubation scarring. After nine months of tracheostomy dependence, she was successfully decannulated following endoscopic balloon dilation.

Discussion/Conclusion: This case illustrates an atypical yet severe complication of RSV in a younger adult with comorbidities. Although RSV is generally mild in adults, the presence of metabolic conditions like diabetes and hypertension may compromise immune and tissue repair responses, increasing susceptibility to airway damage. Her presentation mimicked pediatric and geriatric patterns of RSV, including parenchymal consolidation and post-intubation complications, suggesting potential shared pathophysiology across age groups.

While SGS is well-documented in pediatric RSV cases requiring intubation, this may be one of the first reported adult cases highlighting similar complications in a younger, comorbid population. This case raises critical considerations about current RSV prevention strategies. The patient did not meet the age-based criteria for RSV vaccination, though her comorbidities placed her at high risk for complications. It highlights the need to broaden vaccination eligibility and reconsider guidelines to include chronic conditions and previous airway symptoms. Early RSV testing in rapidly deteriorating adult patients and minimizing intubation duration may help reduce airway sequelae.

In conclusion, this case highlights the underestimated risk of severe RSV outcomes and post-intubation airway complications in younger adults with comorbidities. It calls attention to SGS as a potentially underrecognized complication of RSV in this population and underscores the need for earlier RSV testing in adults presenting with atypical pneumonia and rapid respiratory decline. This case supports the development of broader, comorbidity-informed risk assessment models that go beyond age-based criteria, as well as the importance of tailored airway management strategies. Further research is warranted to better understand the incidence, pathophysiology, and prevention of RSV-associated SGS in adults.

74) WALKING INTO DANGER: A HIGH-VOLTAGE ELECTRICAL INJURY

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High-voltage electrical injuries (HVEIs) are uncommon in internal medicine but pose a diagnostic and triage challenge with high early mortality and deceptive external findings. Internal organs are often more severely damaged than the skin appears to suggest, and failure to recognize early signs such as amnesia, unexplained hypoxia, or burns in high-risk occupations may delay life-saving intervention. This case illustrates how an initially stable patient with a lethal exposure trajectory was appropriately referred from the ED to a burn unit, avoiding catastrophic outcomes.

A male construction worker in his 50s presented to the ED after raising the bed of his dump truck into an overhead power line. Upon exiting the truck, the patient encountered a live wire, resulting in direct current exposure. The patient walked into the ER with dyspnea and exhibited retrograde amnesia of the event. Initial vitals and chest imaging were unremarkable. Burns were noted on the chest, back, hands, and feet—estimated at 25–28% total body surface area (TBSA). The current exited his body through his feet, causing another area of concentrated damage. That same day, he was transferred to a regional burn center after developing hypoxia.

Within days, he developed respiratory failure requiring intubation, and on day 16, he received a tracheostomy. Medical evaluation included serial laboratory tests, telemetry, and monitoring for rhabdomyolysis, dysrhythmias, and organ dysfunction. The medical team rendered extensive wound care, and the patient required serial debridement and reconstruction procedures. The high voltage severely damaged his hands. Notably, he was wearing a ring, which caused deep thermal injury and led to amputation of the left fifth digit. Due to severe damage to his left thumb, a pedicled abdominal wall flap was used to implant the thumb into his abdomen for 21 days, thereby preserving tissue viability. A variety of skin grafting techniques were used on his chest, shoulders, legs, and hands. His right great toe required MatriDerm and wound VAC therapy. The patient was discharged in stable condition with 3% TBSA of open wounds.

This case demonstrates how early symptoms of HVEI—such as amnesia, shortness of breath, or apparent minor burns—require a high index of suspicion. Although the patient walked into the hospital, delayed complications, including respiratory failure and extensive necrotic injury, soon followed. High-voltage injuries, typically >1000 volts, carry a higher risk of internal organ damage, cardiac arrhythmia, and delayed tissue necrosis than low-voltage exposures. Direct contact with a source of current—as seen in this case—further amplifies injury severity by allowing energy to travel through deep structures along neurovascular pathways. In contrast, indirect electrical exposures may cause superficial burns but rarely result in multiorgan damage. Differentiating between the two is critical for proper management. Due to the electrical current exiting through the feet, the patient's left fifth toe required amputation. Internal medicine providers must recognize these early signs of HVEI, initiate a workup, and refer patients promptly to a burn center. Internal medicine clinicians may not encounter HVEI frequently, but recognizing and triaging it can determine survival.

75) A COMPLICATED CASE OF TYPHOIDAL SALMONELLA IN AN IMMUNOSUPPRESSED PATIENT

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Background: Salmonella infections typically cause self-limited gastroenteritis in healthy individuals. However, in immunocompromised patients or those with altered gastrointestinal anatomy, disease course may be prolonged and complicated. This case highlights the importance of individualized treatment and monitoring in such patients.

Case Presentation: A 62-year-old male with a complex medical history—including chronic pancreatitis, gastric outlet obstruction status-post Whipple procedure for intraductal papillary mucinous neoplasm (IPMN), psoriatic arthritis on Enbrel (etanercept), and type 2 diabetes on Metformin—presented to the emergency department with 5+ days of profuse watery diarrhea, nausea, vomiting, and chills. He denied recent travel or antibiotic use but noted his wife had experienced a transient diarrheal illness.

He was afebrile and borderline hypotensive on presentation. CT imaging was negative for colitis or abscess. His labs were notable for an acute kidney injury with creatinine up to 7.3 (baseline 0.94), metabolic acidosis (both anion and non-anion gap), hypokalemia, and hyponatremia, consistent with volume depletion, starvation ketosis, and ongoing GI losses.

Stool PCR returned positive for Salmonella species; Clostridium difficile was negative. Given his immunosuppressed state, he was initiated on IV Ceftriaxone, but then transitioned to oral Azithromycin when no improvement was observed. Diarrhea frequency decreased gradually on Azithromycin, and he was discharged with home-based hospital care on a 10-day antibiotic course. Speciation ultimately revealed Salmonella Typhimurium as the infective organism requiring report to public health officials.

Discussion: Several factors contributed to this patient's prolonged and complicated recovery:

1. Immunosuppression: Enbrel likely impaired the patient's ability to clear infection, leading to delayed clinical response despite antibiotic therapy. Lack of fever and leukocytosis illustrates how classic infection signs may be blunted in immunocompromised patients.
2. Altered GI anatomy and malabsorption: Whipple surgery can reduce gastric acid production, alter gut flora, and impair nutrient and drug absorption—potentially contributing to the prolonged diarrhea, volume loss, and suboptimal initial response to oral antibiotics.
3. Metabolic complications: The patient developed severe hypovolemia and AKI, with superimposed starvation ketosis and electrolyte derangements. These metabolic complications are often under-recognized but can drive morbidity in infectious gastroenteritis, especially in vulnerable populations.

Conclusion: This patient's course underscores the need for high clinical suspicion and tailored management of Salmonella gastroenteritis in immunocompromised individuals, particularly those with surgically altered GI tracts. It also highlights that antibiotic response may be delayed, and that aggressive supportive care—including volume repletion and electrolyte management—is essential. Diagnostic vigilance is warranted even in the absence of systemic signs of infection. Utilizing home base hospital care was a practical bridge for a condition often managed outpatient in other populations.

76) PUTTING A BRIDLE ON GALLOPING PNEUMONIA: A NECROTIZING GROUP A STREPTOCOCCUS INFECTION IN A YOUNG ADULT

Paul Schindler; Colton Sandstrom; Jessica Pierobon, MD
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Galloping pneumonia is a colloquial term referring to aggressive, rapidly progressing pneumonia with potential complications of necrotizing infections, abscess formation, sepsis and high mortality if not treated promptly. This is most common in higher-risk groups, such as young children or immunocompromised individuals. However, in rare cases like this involving Streptococcus pyogenes bacteria, these infections can become serious in young, healthy adults. Rapid action to diagnose and treat these infections is essential to improving outcomes.

A young man in his mid-twenties recently returned from a domestic vacation four days prior to admission, where he was exposed to a sick contact, and subsequently developed symptoms of cough, sore throat, swollen lymph nodes, and fever two days prior to admission. His symptoms progressed to chest pain, dyspnea, and productive cough with dark green sputum and mild hemoptysis, prompting him to seek medical care.

Initial evaluation revealed a patient with tachypnea, tachycardia, and hypotension. ECG showed a pulmonary disease pattern with an incomplete right bundle branch block and right axis deviation. CT angiogram of the chest revealed left lower lobe pneumonia. He was treated for sepsis due to community acquired pneumonia. However, he decompensated overnight with recurrent hypotension triggering a rapid response; antibiotics were expanded from ceftriaxone with azithromycin to piperacillin-tazobactam and vancomycin. On hospital day one, oxygenation declined requiring 6L of supplemental oxygen. The tachypnea and tachycardia continued with purulent sputum production. A repeat CXR and subsequent CT scan showed rapid progression with spread of the pneumonia to the right lung base and increased opacity in the left lower lobe, indicative of "galloping pneumonia." There were no complications of necrotizing infection, abscess, or empyema.

Gram-positive cocci in chains were detected in the blood cultures, so the infectious disease team recommended resuming ceftriaxone and azithromycin and adding linezolid for its anti-toxin effect. Pulmonary medicine was also consulted. On hospital day two, his constitutional and respiratory symptoms improved, and his cough was less productive, but chest pain persisted. Blood cultures confirmed S. Pyogenes bacteria, and antibiotics were narrowed to ceftriaxone monotherapy. He was weaned off oxygen and discharged on hospital day six. He completed 4 weeks of IV ceftriaxone due to the severity of his infection. Outpatient immunodeficiency testing was also conducted after completion of the antibiotic therapy.

This case emphasizes how rapid diagnosis and treatment can be critical to outcomes of bacterial infections. Even though most cases of pneumonia are caused by bacteria such as Streptococcus pneumoniae or Haemophilus influenzae providers must be alert to signs of more aggressive, rarer infections from bacteria such as S. pyogenes. Abscess formation, empyema, pleural effusion, and sepsis are some dangerous complications of this infection. Often, complications like these require urgent cardiothoracic intervention. Repeat imaging and close monitoring of patients with pneumonia can be valuable in detecting and treating aggressive infections such as the one described in this case.

77) BRIDGING HEALTH LITERACY GAPS: THE IMPACT OF EDUCATION AND LANGUAGE ON GUIDELINE-CONCORDANT SCREENING AND VACCINATION

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Introduction: Preventive services are cornerstones of population health, yet uptake remains suboptimal and inequitable. Health literacy, defined as the capacity to obtain, process, and understand basic health information, is a recognized driver of individual and community health. This study aims to understand the relationship between health literacy and preventive care utilization. Based on prior literature, we used educational attainment and spoken home language as proxies for health literacy in our sample.

Methods: We analyzed data from the 2023 National Health Interview Survey, identifying adults eligible for five USPSTF-recommended preventive services: colonoscopy, Pap smear, mammography, non-diabetics blood sugar testing, and annual influenza vaccination. Each outcome was modeled via survey-weighted logistic regression, assessing home language (English vs. non-English) and education level as primary predictors. Additionally, a composite metric, defined as receiving at least three of the five preventive care services per USPSTF guidelines, was modeled similarly. All models adjusted for age, race/ethnicity, and insurance coverage.

Results: A total of 21,110 respondents were included in our sample, representing 184.5 million US adults after survey weighting. Lower educational attainment was linked to significantly reduced odds of guideline-concordant screening for pap smears (OR 0.59, 95% CI 0.49-0.72, $p<0.001$), mammogram (OR 0.62, 95% 0.51-0.77, $p<0.001$), blood sugar testing (OR 0.64, 95% CI 0.54-0.76, $p<0.001$), and influenza vaccination (OR 0.47, 95% CI 0.43-0.51, $p<0.001$), but not colonoscopy. Non-English speakers had significantly lower odds of Pap smear (OR 0.65, 95% CI 0.50-0.85, $p<0.001$) and blood sugar testing (OR 0.81, 95% CI 0.66-0.99, $p<0.04$), but not the other services. In our composite model, respondents with lower education had 41% lower odds of obtaining at least three of the five preventive care services (OR 0.59, 95% CI 0.54-0.64, $p<0.001$), whereas home language was not a significant predictor.

Discussion: Using education and home language as proxies for health literacy, we identified clear disparities in preventive-care uptake. Targeted interventions such as expanded language assistance and interpretation services, in addition to culturally sensitive health resources, may aid in closing these gaps in preventive health behaviors.

78) PERCEPTIONS OF SECURE TEXT MESSAGING SYSTEMS AMONG HOSPITALIST FACULTY AND ADVANCED PRACTICE PROVIDERS: A MIXED-METHODS STUDY

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Introduction: Secure text messaging systems (STMS) have become foundational tools for inpatient communication, offering HIPAA-compliant, real-time messaging between providers. These systems are increasingly used in place of pagers to streamline care coordination, enable closed-loop communication, and improve operational efficiency. However, as clinical environments grow more complex and message volume rises, unintended consequences such as alarm fatigue, communication errors, and workflow disruption have surfaced. Despite the rapid adoption of STMS, few studies have evaluated clinician-level perspectives on its practical impacts. This study aimed to assess the perceived benefits, drawbacks, and improvement opportunities of STMS among hospitalist faculty and Advanced Practice Providers (APPs), whose frontline roles make them highly affected by communication system design.

Methods: A cross-sectional, anonymous survey was distributed to hospitalist faculty and APPs in the Division of General Internal Medicine at Froedtert Hospital and the Medical College of Wisconsin. Of 133 eligible clinicians, 64 responded (response rate: 48.1%). The survey included structured Likert-scale items and open-ended questions. Quantitative data were analyzed using descriptive statistics and comparative tests; qualitative responses underwent inductive thematic analysis using Dedoose software.

Results: Most respondents (78.1%) preferred STMS over pagers or supported increased STMS use. The majority (78.1%) received fewer than 51 chat messages per day, and 87.5% rated message urgency as low to moderate. STMS was rated positively for facilitating multidisciplinary care coordination (92.1%), promoting closed-loop communication (79.4%), and expediting discharge processes (59.4%). Additionally, 76.6% either agreed or strongly agreed that STMS supported teamwork across multiple communication modalities. However, 56.6% of respondents indicated that STMS contributed to alarm fatigue and cognitive overload, and nearly 70% reported negative impacts on clinician well-being. Faculty rated statements about impaired teamwork significantly lower than APPs (mean 2.71 vs. 3.50, $p = 0.006$), indicating greater agreement with concerns about STMS-related impacts on team communication. While most clinicians did not believe STMS compromised patient safety or overall teamwork, qualitative data revealed concerns about excessive low-priority messaging, miscommunication, and disruptions to clinical flow. Suggested improvements included urgency labeling features, clearer communication protocols, targeted staff education, and maintaining pagers for time-sensitive issues.

Conclusions: STMS is broadly regarded as a beneficial communication tool among hospitalist clinicians, but concerns about overuse, message burden, and well-being impacts remain prominent. Interventions such as message triaging tools, standardized usage guidelines, and role-based communication expectations may optimize effectiveness while minimizing unintended harms. Broader evaluation across institutions may further guide improvements in digital communication infrastructure.

79) DETERMINANTS OF PERCEIVED SOCIAL ISOLATION AMONG INDIVIDUALS WITH INPATIENT STAYS: INSIGHTS FROM A NATIONAL DATABASE

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Introduction: Social isolation is associated with various adverse health outcomes, including increased risk of chronic disease, higher mortality, and greater healthcare utilization. The National Academies of Sciences, Engineering, and Medicine (NASEM) identifies social isolation as an emerging public health concern. However, limited data exist on the factors associated with perceived social isolation in hospitalized individuals. This study analyzes a national database to identify independent factors linked to perceived social isolation among individuals with inpatient stays, with the goal of improving recognition and intervention opportunities.

Methods: We used data from the 2022 Medical Expenditure Panel Survey (MEPS) to identify U.S. adults who reported at least one inpatient stay. The primary outcome was perceived social isolation (binary: yes/no). Independent variables included sociodemographic factors, comorbidities, and self-reported health status. We conducted univariate analyses using chi-square and t-tests, followed by multivariate logistic regression to identify independent associations. Analyses were conducted using R (v4.1.2).

Results: Among the weighted sample of 16,520,260 adults, 33% reported feeling socially isolated. On univariate analysis, social isolation was significantly more common among individuals who were widowed, divorced, separated, or never married; had low income; had public health insurance; were diagnosed with depression; or reported fair/poor perceived health (Table 1). In adjusted models, independent factors associated with higher odds of social isolation included: college graduates or higher (OR 2.38, 95% CI 1.17–4.84); widowed/divorced/separated (OR 2.46, 95% CI 1.45–4.16); never married (OR 2.78, 95% CI 1.20–6.44); public insurance holders (OR 1.86, 95% CI 1.06–3.24); and those with depression (OR 7.34, 95% CI 4.10–13.12) (Table 2). Notably, being non-Hispanic Black was marginally associated with lower odds of isolation (OR 0.42, 95% CI 0.18–0.99, P = 0.05).

Conclusion: Approximately one-third of individuals with inpatient stays report experiencing social isolation. Hospitals offer a valuable setting for identifying and supporting these individuals. Key risk factors include being unmarried or previously married, having public insurance, higher education attainment, and depression. Interestingly, higher education was associated with increased odds of perceived isolation, suggesting complex social dynamics among hospitalized adults. Hospitalists are uniquely positioned to screen for isolation and coordinate with social workers to connect patients with support services. Further longitudinal and interventional research is needed to strengthen the evidence base and guide effective interventions.

80) TRENDS OF SCREENING RATES & PREVALENCE OF COLORECTAL CANCER WITHIN ADULTS IN THE ONEIDA NATION COMMUNITY COMPARED TO THE WISCONSIN ADULT POPULATION

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Introduction: Colorectal cancer (CRC) remains a leading cause of cancer-related deaths in the United States, yet disparities exist in screening and detection among different populations. This study aims to assess CRC screening trends within adults in the Oneida Nation community.

Methods: We conducted a retrospective chart review using the Oneida Comprehensive Health database, analyzing CRC screening rates among adults from 2019 to 2023. Screening data were stratified by sex, age, and tribal affiliation with annual patient counts recorded. We calculated screening proportions with 95% confidence intervals and compared them to state-level data from the Wisconsin Department of Health Services.

Results: A total of 1,218 screenings were performed over the five-year period. Preliminary data suggest fluctuating screening rates, with notable increases post-2020, potentially reflecting recovery from COVID-19-related healthcare disruptions. While male screening rates reflect a positive trend over time, females accounted for 67-73% of screenings annually, underscoring a persistent gender disparity. Comparative analyses with Wisconsin state averages will clarify whether the Oneida community is under- or overperforming in CRC screening benchmarks.

Conclusions: Identifying trends and gaps in CRC screening within the Oneida Nation is critical to addressing health disparities and guiding targeted interventions. This study will provide evidence to inform tribal health leaders and public health stakeholders, promoting equity in cancer prevention and early detection efforts.

81) WHEN YOU HEAR HOOFBEATS: AN INTERESTING PRESENTATION OF ZEBRA BODIES ASSOCIATED WITH HYDROXYCHLOROQUINE USE

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Introduction: The presence of zebra bodies in kidney biopsies is commonly recognized as a distinctive characteristic of Fabry disease. However, certain medications such as Hydroxychloroquine may also induce zebra body formation by mimicking the pathogenesis of Fabry disease through phospholipidosis. First developed as antimalarial drugs, Chloroquine and Hydroxychloroquine are widely used today in the management of autoimmune disorders including systemic lupus erythematosus (SLE) and rheumatoid arthritis (RA). While both medications have been generally regarded as safe, serious side effects such as retinopathy, myopathy, and cardiomyopathy have been reported. Hydroxychloroquine has been particularly associated with the presence of zebra bodies in kidney biopsies.

We present a case illustrating the presence of zebra bodies in an individual with stage 3a chronic kidney disease (CKD) associated with C3 glomerulonephritis (C3GN) and long-term Hydroxychloroquine use.

Case Description: A 75-year-old female with a history of rheumatoid arthritis was evaluated for proteinuric Stage 3 CKD. A serum revealed a monoclonal band and so biopsy was performed. Histology revealed C3 dominant mesangioproliferative glomerulonephritis, ultrastructural evidence of podocyte lipid accumulation, and focal global glomerular sclerosis. Interestingly, increased podocyte lipid accumulation was noted to resemble the zebra bodies often seen in patients with Fabry disease, which prompted medication history review and confirmation that the patient had been on the amphiphilic drug hydroxychloroquine for many years.

Discussion: The presence of zebra bodies in kidney biopsy specimens from individuals taking hydroxychloroquine has been uncommon, but still calls for further investigation. While there is an association of zebra bodies and increase phospholipidosis activity, the histological difference between drug-induced zebra bodies and those observed in Fabry disease requires further clarification. Understanding these differences will allow for further assessment regarding the implications of long-term usage of drugs such as hydroxychloroquine within clinical settings. Our patient was referred to hematology for bone biopsy, but hydroxychloroquine was not thought to be causative of any functional or structural kidney damage and was continued.

82) AEROCOCCUS URINAE: A RARE CAUSE OF ENDOCARDITIS IN A KIDNEY TRANSPLANT RECIPIENT

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Introduction: Aerococcus urinae is a gram-positive coccus bacterium normally associated with urinary tract infections (UTI) in older adults with underlying urologic conditions. Although rarely reported to cause infective endocarditis (IE), typical presentation of A. urinae IE includes a combination of fever, cough, dyspnea, and urinary symptoms.

Case Presentation: A 54-year-old renal allograft patient with past medical history of end stage renal disease due to systemic lupus erythematosus presented to a community hospital with multiple weeks of lethargy, cough, decreased appetite, and urinary frequency 12 months after transplant.

She was initially admitted to an outside hospital 2 days prior for treatment of acute kidney injury and UTI. Urine and blood cultures all grew A. urinae. Transthoracic echocardiogram showed mild aortic stenosis and severe aortic regurgitation with a 6x9mm vegetation on the left coronary cusp as well as moderate to severe mitral regurgitation with a 6x9mm non-mobile vegetation on anterior mitral valve leaflet. She received one dose of vancomycin 1g IV and was transferred to an academic hospital for further treatment of UTI, A. urinae septicemia, and endocarditis.

Ceftriaxone 2g IV was initiated, and she was seen by Cardiology, Thoracic Surgery, and Transplant Infectious Disease. Chest x-ray showed new bilateral lung opacities consistent with pulmonary edema. MRI brain revealed no septic emboli. Transesophageal echocardiogram (TEE) confirmed severe aortic insufficiency and moderate mitral insufficiency with aortic vegetation. Given her comorbidities, ceftriaxone treatment was pursued initially over surgical repair. After minimal improvement to valvular disease following 3 weeks of antibiotic therapy, aortic valve replacement was conducted.

Discussion/Conclusion: Although A. urinae is increasingly reported as a cause of UTIs, its role in IE remains extremely rare, with a prevalence of 3 per 1 million, and fewer than 60 cases reported in the literature. This case report presents a rare instance of A. urinae IE and is the first documented case in a transplant recipient. UTIs caused by A. urinae are most commonly seen in patients with risk factors such as male sex, advanced age, and comorbid genitourinary tract pathology, making this case atypical.

Given the high estimated mortality rate – exceeding 50% – and significant morbidity associated with A. urinae IE, early diagnosis is critical for improving patient outcomes. Blood cultures and TEE are essential for diagnosis and for evaluating structural and valvular abnormalities. Additionally, since many patients with IE have a history of recurrent urinary symptoms or UTIs – some with positive urine cultures for A. urinae – urine cultures can offer valuable diagnostic clues to clinicians regarding the source of IE.

A. urinae is generally susceptible to penicillin, ampicillin, ceftriaxone, vancomycin, and carbapenems, but shows increased resistance to fluoroquinolones, tetracyclines, and trimethoprim-sulfamethoxazole. Therefore, early initiation of appropriate antibiotic therapy based on susceptibilities is crucial. Surgical intervention is often needed in cases of A. urinae IE, and a multidisciplinary approach involving Cardiology, Thoracic Surgery, and Infectious Disease specialists is essential for determining optimal management.

83) UNDER THE BRIDGE: A CASE OF SUPRA-VENTRICULAR TACHYCARDIA INDUCED INFARCTION WITHOUT OBSTRUCTIVE CORONARY ARTERY DISEASE

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Myocardial bridging is a congenital coronary anomaly characterized by an intra-myocardial segment of a coronary artery with overlying myocardium forming a "bridge." Although frequently asymptomatic, myocardial bridging can contribute to myocardial ischemia, particularly in the presence of conditions that increase myocardial demand or reduce coronary perfusion time.

A 64-year-old man with a medical history notable for Wolff-Parkinson-White (WPW) status post-ablation, intermittent palpitations responsive to vagal maneuvers, bicuspid aortic valve and hyperlipidemia presented to the emergency department with one hour of sub-sternal chest discomfort and persistent palpitations unresponsive to vagal maneuvers. Electrocardiogram (ECG) revealed a regular narrow complex supra-ventricular tachycardia (SVT) at a rate of 159 beats per minute, with diffuse ST depressions and ST elevation in lead aVR: a pattern typically concerning for left main (LM), proximal Left Anterior Descending (LAD), or multi-vessel disease (MVD). After treatment with aspirin, diltiazem and fluids, the patient's symptoms and arrhythmia resolved. A repeat ECG showed a return to sinus rhythm and normalization of ST changes. His Troponin levels exhibited a significant rise and fall, consistent with myocardial infarction versus injury. Transthoracic echocardiogram revealed preserved left ventricular function, no regional wall motion abnormalities, and a bicuspid aortic valve with moderate aortic insufficiency. Coronary angiography was performed as part of ischemic evaluation. This demonstrated mild non-obstructive coronary artery disease and systolic compression of a segment of the LAD, consistent with myocardial bridging. He was discharged on Metoprolol and scheduled for an SVT ablation.

This case highlights myocardial bridging as an under-recognized cause of myocardial infarction and ischemic ECG changes, particularly in the setting of tachyarrhythmia. In SVT, reduced diastolic duration limits coronary perfusion, which, when combined with dynamic systolic compression from a myocardial bridge, can lead to myocardial ischemia. In this patient, that mechanism provided a physiologic explanation for the concerning ECG pattern of diffuse ST depressions with ST elevation in aVR, which is typically associated with LAD, LM, or MVD. Though this pattern often raises concern for high-risk obstructive lesions, this case highlights the importance of considering myocardial bridging in the differential diagnosis.

84) GLOCALIZATION IN OPHTHALMOLOGY DEPARTMENTS-TRENDS IN MISSION AND OUTREACH

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Introduction: With rising interest in glocalization, global health (GH) opportunities and international electives, ophthalmology residency programs and departments may overemphasize GH outreach, while overlooking impactful local initiatives. Glocalization combines localization and globalization to adapt and implement medical advancements to improve healthcare. The purpose of this analysis is to assess the balance of global and local outreach opportunities featured on ophthalmology department and residency training websites.

Methods: Programs were identified using the American Medical Association's Fellowship and Residency Interactive Database (FREIDA). Programs without websites were excluded. We searched programs' websites for global/international and community/ local outreach pages and recorded the number of clicks to reach each page. The type of outreach initiative and whether programs have a dedicated global or international department or committee was recorded. Website accessibility of local and global outreach was quantified by the number of clicks from the department's main page. We used descriptive statistics to compare the distribution of global and local outreach opportunities.

Results: A total of 126 ophthalmology residency programs were identified. Of these programs, 91 were university based, 20 were community-based university affiliated, 9 were community based, 2 were military based, and 1 was classified as other. Most websites did not advertise either global or local outreach. Of those advertising outreach, local and global initiatives did not significantly differ. Local outreach advertising consisted of offsite free or low-cost clinics. This contrasted with global outreach initiatives. While the programs with global outreach advertisements rarely included detailed descriptions, global outreach initiatives mentioned included partnering with or helping establish local clinics, resident surgical missions, and retinopathy screening. Furthermore, while global outreach rarely highlighted a specific specialty, cataract, retina, and telemedicine focuses were mentioned most. About half of the programs offer optional global ophthalmology or international electives. Global or international departments or committees within ophthalmology programs were uncommon. We expect that university-based programs will have a greater likelihood of advertising global outreach compared to community-based programs. Because this study relies on publicly available program websites, any initiatives or curriculum not disclosed online represent a limitation of this study and were not captured in the data and analysis.

Conclusion: Emphasizing global health outreach and international electives is increasingly attractive to prospective residents given the increasing GH interest among medical students. Ophthalmology departments and residency programs vary their emphasis on global versus local outreach, with some not showcasing either and instead focusing on research initiatives. Showcasing local outreach and service can also be impactful on attracting prospective learners. Understanding the visibility of global and local opportunities can help guide residency programs and departmental focus while giving insight into applicant values. Future research should investigate the long-term impacts of glocalization on ophthalmology outreach and education.

85) COMMUNITY-DEFINED OBSTETRIC NEEDS AMONG ROHINGYA REFUGEE WOMEN IN MILWAUKEE: A COMMUNITY-DEFINED, TRAUMA-INFORMED ASSESSMENT

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Background: Rohingya refugee women in the U.S. face unique barriers to safe, respectful obstetric care, including limited English proficiency, gender norms, past trauma, and unfamiliarity with U.S. health systems. These challenges contribute to maternal health disparities among refugee populations nationally (Agunwamba et al., 2022). Milwaukee hosts the largest Rohingya community in the U.S. (~3,000), yet no published studies examine their perinatal care experiences. This study aimed to identify obstetric needs using a trauma-informed, culturally grounded approach.

Methods: We conducted a cross-sectional needs assessment of Rohingya refugee women who delivered at Aurora Sinai Medical Center between January 2019 and December 2023. Participants were foreign-born Rohingya residing in Milwaukee County with at least one prenatal visit to Aurora Sinai. Trained Rohingya-language interpreters facilitated semi-structured phone surveys. The REDCap-based instrument included both quantitative and open-ended items. Thematic analysis was performed alongside emotion mapping using the NRC Emotion Lexicon (Mohammad & Turney, 2013) to explore the emotional tone of participant narratives.

Results: All 24 participants received both prenatal and postpartum care. While 88% rated their provider relationship as "excellent," 71% reported that their birth experience did not meet expectations. Reported barriers included transportation (38%), language access (25%), and difficulty navigating healthcare systems (13%). Although 96% received information from a provider or nurse, several participants reported limited understanding of labor options or pain management. Participants consistently preferred verbal explanations supported by interpreters, reflecting both low literacy and the absence of a standardized Rohingya script (UNHCR, 2023). A strong preference for female providers—particularly during labor and delivery—was also noted, aligning with cultural norms around modesty and gender concordance.

Thematic analysis revealed five major domains: (1) positive care experiences, (2) communication challenges, (3) unmet birth expectations, (4) cultural preferences, and (5) health education needs. While participants appreciated provider kindness—especially in contrast to prior discrimination in Malaysia (Fortify Rights, 2018)—many described fear, confusion, and limited ability to advocate for themselves during labor. Several participants noted agreeing to procedures without full explanation, reflecting a broader theme of passive compliance and reduced agency. Emotion analysis confirmed strong positive sentiment regarding provider relationships, but mixed emotional tone around labor communication and delivery expectations.

Discussion: Despite strong provider trust, participants encountered persistent cultural and structural barriers to equitable obstetric care. These findings are consistent with prior literature on cesarean risk, perinatal anxiety, and postpartum follow-up challenges among refugee populations (Heslehurst et al., 2018). They underscore the need for same-gender interpreter access, culturally tailored education tools, and trauma-informed communication strategies in maternity care.

Next Steps: Findings are being shared with Rohingya community leaders and OB/GYN stakeholders. A culturally tailored intervention—including interpreter-narrated videos, visual birth planning tools, and postpartum support resources—is under co-design and will be piloted at Aurora Sinai in 2025–2026.

Conclusion: Culturally grounded, linguistically accessible interventions co-designed with refugee communities are essential to advancing maternal health equity.

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86) A CASE OF VEXAS SYNDROME (VACUOLES, E1 ENZYME, X-LINKED, AUTOINFLAMMATORY, SOMATIC)

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VEXAS syndrome (vacuoles, E1 enzyme, X-linked, autoinflammatory, somatic) is a newly recognized adult-onset inflammatory disease associated with mutations in the UBA1 gene in hematopoietic precursor cells. First identified by Beck et al, VEXAS syndrome stems from dysfunction of the E1 enzyme, leading to inflammation with multi-organ involvement [1]. Variable presentation and limited treatments make diagnosis challenging, emphasizing the need for exploring diagnostic and therapeutic strategies. Here we present a case of VEXAS syndrome with recognized histopathological findings.

An 82-year-old male presented to the emergency department with fevers and shortness of breath. Two years prior, he received empiric steroids and intermittent tocilizumab for suspected giant cell arteritis (GCA). Temporal artery biopsy was not conclusive for GCA and NM PET scan was negative for evidence of large vessel vasculitis. On admission, our patient was febrile, and hypoxic, with acute kidney injury, thrombocytopenia and anemia. He developed a diffuse morbilliform rash and lymphopenia on day three. The patient required transfer to the ICU for hypoxic respiratory failure and was started empirically on IV antibiotics for possible pneumonia. infectious workup was negative. CT angiogram of the chest ruled out pulmonary embolism and showed diffuse infiltrates. Bronchoscopy findings were consistent with alveolar hemorrhage. ANA titer for this admission was 1:80 with prior screens negative. Bone marrow biopsy showed hypercellular (90%) marrow with sideroblastic anemia, megakaryocyte atypia with mild plasmacytosis with morphologic atypia. Examination of early granulocytic and erythroid precursors showed frequent cytoplasmic vacuolization, a notable feature in this case. A myeloid malignancy panel was positive for both UBA-1 mutation known to be associated with VEXAS syndrome as well as TP53 of unknown significance. Our hematology and rheumatology services collaborated with the NIH and he was started on high-dose steroid taper and tocilizumab infusions.

We present a case of VEXAS syndrome, a condition currently understood to stem from dysregulation of the ubiquitylation pathway involved in immune signaling regulation [2]. Phenotypic manifestations are variable with multi-organ involvement, rash (90%), fevers, cytopenias, joint and pulmonary manifestations. Hypercellular marrow and vacuolization restricted to erythroid precursors is a characteristic feature in the literature and is also present in our case [2] [3].

Our patient was treated empirically with steroids and tocilizumab for suspected GCA. Presently, there are no established treatment guidelines with current strategies focused on controlling the inflammatory symptoms with high-dose steroids and interleukin 6 (IL-6) receptor monoclonal antibodies (tocilizumab). Newer agents like ruxolitinib (JAK2 inhibitor) and tofacitinib (JAK1/3 inhibitor) have been used in patients with treatment-refractory VEXAS. Many cases become refractory to steroids. Methotrexate, azathioprine, and mycophenolate have been reported as ineffective [4] [5]. Allogeneic hematopoietic stem cell transplant has been successful in subsets of patients [6] [7]. Clinical trials are needed to establish strong evidence of the clinical efficacy of different treatment options [5] [8]. Further understanding of the disease will aid in optimizing management and improving clinical outcomes. In the future therapies targeting the ubiquitylation pathway or UBA1 gene editing may be promising.

87) INTERSTITIAL LUNG DISEASE WITH POSITIVE JO-1 ANTIBODY

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Introduction: Interstitial lung disease (ILD) can manifest from a variety of causes, notably infections, drug reactions, autoimmune conditions, and environmental exposures. Diagnosis is dependent on recognition of common clinical symptoms, including shortness of breath (SOB), dyspnea on exertion (DOE), cough, and hemoptysis. Thus, diagnosis can be challenging and delayed when ILD presents either acutely or without overt systemic symptoms. We report a case of rapidly progressive ILD in a patient with a complex autoimmune background and minimal extrapulmonary findings. The severity of his respiratory failure ultimately required high-level critical care and led to the diagnosis of a rare autoimmune condition.

Case Description: A 49-year-old male with a past medical history of hypertension, hyperlipidemia, type 2 diabetes mellitus, diabetic foot infection status post-amputation, seronegative rheumatoid arthritis (previously well controlled with methotrexate), and chronic anemia presented to an outside hospital with two-week history of new onset of SOB, DOE, and orthopnea. In recent years, he had multiple upper respiratory tract infections and episodes of pneumonia that required emergency department visits. Chest imaging obtained during these visits revealed non-specific infiltrates that were attributed to his acute infection. On admission, a chest CT was ordered and revealed bilateral ground glass opacities, cystic changes, and honeycombing concerning for ILD.

Given the concern for ILD, the patient was appropriately started on methylprednisolone and empiric broad spectrum antibiotics. Extensive serologic workup was significant for positive p-ANCA, ANA, and anti-Jo. Despite treatment, he required multiple reintubations and eventually veno-venous extracorporeal membrane oxygenation (VV-ECMO) after developing acute respiratory distress syndrome (ARDS). The patient was diagnosed with anti-synthetase syndrome (ASS) with predominant pulmonary involvement. This was supported by positive anti-Jo-1 antibodies, a history of inflammatory arthritis, and the cutaneous finding of "mechanic's hands." He was initiated on cyclophosphamide.

Discussion: This case highlights the complexities in diagnosing and managing pulmonary-dominant ASS. Because ILD can present as the first or only sign, especially with no clinical evidence of myositis, the patient can often be misdiagnosed. ASS is 2-3 times more common in females than males, which may affect diagnostic consideration in atypical presentations such as in this case. Due to the patient's history of rheumatoid arthritis and long-term use of methotrexate, initial differential diagnoses included heart failure and drug-induced pneumonitis. However, the combined presence of anti-Jo-1 antibodies, skin manifestations such as "mechanic's hands," and evolving fibrotic changes on imaging gradually pointed toward ASS. The patient's complications included hypoxemic respiratory failure requiring mechanical ventilation, VV-ECMO, and high-dose immunosuppression. Additionally, on week 9 of hospitalization, he developed a morbilliform rash believed to be antibiotic-induced. In summary, this case illustrates the critical role of including autoimmune conditions on the differential when diagnosing unexplained ILD and the value of ordering serologic testing promptly when ILD or ASS is suspected. Because delayed diagnosis can lead to a higher risk of infection and respiratory failure, ASS should be considered early in ILD presentation, even without initial evidence of myositis.

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88) WHEN A SIMPLE "BLESS YOU" WON'T SUFFICE: A CASE OF SPONTANEOUS PNEUMOTHORAX

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Introduction: Sneezing is a common, involuntary action the human body does in response to nasal irritants. This normal, physiologic action transiently increases intrathoracic pressure and strain on pulmonary parenchyma. This innocuous action very rarely leads to pulmonary complications like pneumothorax. Having underlying lung diseases like advanced COPD, bullous lung disease, or bronchiectasis can increase the risk. Sarcoidosis is an inflammatory disease characterized by non-caseating granulomatous inflammation that frequently affects the lungs. In less than 1% of cases, advanced sarcoidosis can lead to pulmonary bulla formation. Here we describe a case of sneeze-induced spontaneous pneumothorax in a patient with bullous sarcoidosis.

Case Description: A 39-year-old male with a past medical history of pulmonary sarcoidosis on adalimumab and methotrexate, pulmonary hypertension, and obesity presented to the emergency department with two days of constant sharp chest pain and shortness of breath that occurred after an intense sneeze. On presentation, he was in respiratory distress, hypoxic and tachypneic. Immediate chest x-ray revealed a large right pneumothorax with mediastinal shift concerning for a tension pneumothorax. A pigtail chest tube was emergently placed with resolution of the pneumothorax, but was complicated by persistent air leak.Chest CT demonstrated right asymmetric biapical bullous disease, with a large dominant bulla appearing to communicate with the pneumothorax. He was treated with supplemental oxygen and started on prednisone 20mg daily. Unfortunately, throughout the hospital stay, there continued to be a significant air leak. After failing management, the patient went for right upper lobe apical blebectomy. Final pathology showed benign pulmonary parenchyma, fibrosis, non-necrotizing granuloma consistent with sarcoidosis. The patient was discharged home in improved condition.

Discussion: Bullous lung disease in sarcoidosis occurs when granulomatous inflammation leads to peribronchial fibrosis, retraction and formation of large air-filled spaces. It is an infrequent complication of pulmonary sarcoidosis. It occurs in Scadding stage IV sarcoidosis, which is defined as advanced, fibrotic disease. Interestingly, this stage occurs more often in relatively young patients without a history of smoking. At this stage of disease, corticosteroids are unfortunately of limited effectiveness in preventing progression. As seen in this case, spontaneous rupture of these bulla can lead to the life-threatening complication of tension pneumothorax. It is estimated that up to 95% of spontaneous pneumothoraces resolve when treated conservatively within 30 days. However, as seen in this case, the resolution rate in stage IV fibrotic sarcoidosis is significantly lower. In rare cases such as this, blebectomy is required. Ultimately, lung transplantation is needed for these patients with advanced stage sarcoidosis.

89) A COMPLEX CASE OF IGA VASCULITIS IN AN ADULT

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Introduction: IgA vasculitis, previously known as Henoch-Schönlein purpura, is the most common childhood systemic vasculitis, yet it is a rare disease in adults, with an annual incidence of 0.8-1.8/100,000 [1]. The classic characteristics of IgA vasculitis include palpable purpura or petechiae, arthralgias, gastrointestinal disturbances, and nephropathy. In addition, certain drugs, such as TNF-a inhibitors, can trigger the development of biopsy-proven IgA vasculitis and nephropathy [2].

Case Presentation: 47-year-old male with a past medical history of presumptive Crohn's disease (not proven by biopsy), inflammatory arthritis, and lymphedema presented to the emergency department with worsening bilateral lower extremity purpura and abdominal pain.

Two months prior to the presentation, the patient was admitted to an outside hospital for abdominal pain and gastrointestinal bleeding, which was thought to be attributable to a Crohn's flare. At that time, he was treated with prednisone and transitioned from adalimumab to infliximab. Following the initiation of the infliximab infusion, the patient developed new lower extremity lesions, and a skin biopsy revealed a leukocytoclastic vasculitis. The patient was discharged; however, the lesions continued to increase in size and number.

The patient returned to the emergency department with leukocytosis (WBC count 21.4 103/uL [3.9-11.2), anemia (hemoglobin 12.8 g/dL [13.7-17.5]), elevated inflammatory markers (CRP 23 mg/dL [<0.50], ESR 114 mm/hr [0-25]), and was readmitted for concern of worsening leukocytoclastic vasculitis. Urinalysis and repeat skin biopsy for IgA staining was done, given the history of diffuse gastrointestinal pain (without biopsy-proven inflammatory bowel disease [IBD]), leukocytoclastic vasculitis, and inflammatory arthritis. The patient was then started on prednisone 40 mg daily. The repeat skin biopsy was consistent with IgA vasculitis. The urinalysis was notable for hematuria, proteinuria, and RBCs, and thus, along with the constellation of related symptoms, a renal biopsy was indicated. The biopsy showed IgA vasculitis nephritis with >27% crescents. A colonoscopy was performed to evaluate for IBD, and his gastrointestinal discomfort throughout admission. No definitive diagnosis of IBD/Crohn's was made because of negative biopsy results, so infliximab was stopped. The patient was then started on IV methylprednisone 500 mg twice daily for 3 days, then switched to prednisone 80 mg daily with improvement of his symptoms. Ultimately, given the array of symptoms and positive skin and renal biopsies, this patient likely had drug-induced, IgA vasculitis with nephropathy secondary to infliximab.

Discussion: Here, we present a case of IgA vasculitis in an adult. Given the patient's complex medical history and unconfirmed diagnosis of Crohn's disease, it was challenging to parse out which symptoms were related to which of the possible conditions until more definitive tests were performed to confirm nephritis and to rule-out IBD. Ultimately, the care team decided that the inciting event was the initiation of TNF-a inhibitor, infliximab.

90) A DEFINING SEIZURE

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Background/Introduction: Toxoplasmosis is a zoonotic infection caused by the intracellular protozoan Toxoplasma gondii. Although it is commonly asymptomatic in immunocompetent individuals, it can cause significant morbidity in immunocompromised patients, leading to severe neurological, ocular, or systemic complications.

Case Presentation: A 32-year-old male presented to an outside hospital emergency department with new-onset generalized tonic-clonic seizures—two witnessed at home and one in the ED. Initial workup included a non-contrast head CT, which revealed a subcortical white matter hypodensity in the left frontal lobe without significant mass effect or midline shift. The patient reported experiencing headaches over the past few days and chronic nonbloody diarrhea over the past few months. He had no significant past medical history. The patient had recently immigrated from Venezuela one year prior and reported frequent international travel before relocating to the U.S.

MRI of the brain revealed a 1.2 cm intra-axial lesion in the left frontal lobe with surrounding white matter edema, with differential including glial tumor, metastasis, and infection. He was started on scheduled levetiracetam 1g twice daily, remained seizure-free during his hospital course, and was transferred to UWH for further diagnostic evaluation, including neurosurgery consultation for possible brain biopsy. Workup for infection was pursued, including a formal infectious disease consultation. At UWH, the patient reported a resolved episode of herpes zoster involving the left lower back and abdomen approximately one month prior. Given the leukopenia and recent shingles, there was concern for immunocompromised.

HIV antigen/antibody testing returned positive, with confirmatory HIV-1 RNA >500,000 copies/mL and a CD4 count of 144 cells/μL. Toxoplasma IgG was positive. He was initiated on anti toxoplasmosis therapy with pyrimethamine, sulfadiazine, and leucovorin, as well as antiretroviral therapy with Biktarvy (bictegravir/emtricitabine/tenofovir alafenamide). Upon notification of his diagnosis, he learned from extended family that a previous partner—whom he had been with nine years ago, had HIV/AIDS—information he had not been aware of until then.

Discussion/Conclusion: This case highlights the importance of maintaining a broad differential diagnosis, particularly when clinical information is limited and the presentation is atypical. A previously healthy 32-year-old male presented with new-onset seizures and a brain lesion initially suggestive of neoplasm. However, his subtle systemic findings—chronic diarrhea, recent shingles, and mild leukopenia—prompted further investigation, ultimately revealing undiagnosed HIV with cerebral toxoplasmosis.

91) THE ROLE OF CLINICAL EMPATHY AS PERCEIVED BY MEDICAL STUDENTS

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Introduction: Clinical empathy is a pillar of medical practice, with evidence pointing to improvement of both clinical outcomes and patient resilience when physician empathy is employed effectively. Despite this interpersonal skill's beneficial value in medicine, many studies also indicate that empathy significantly declines during the third year of medical school.

Objective: Our study aimed to understand how medical students perceive the importance of empathy in patient care and identify ways to improve empathy training within the medical curriculum. Another objective was gauging medical students' perceptions regarding the role of empathy in patient outcomes and gathering suggestions for enhancing empathy education.

Methods: A survey was distributed to 456 third (M3) and fourth (M4) students at the Medical College of Wisconsin (MCW) between August and September 2018. The survey responses were anonymous, yielding a response rate of 39%. Chi-square analysis was performed to assess any significant differences between male and female students, as well as between third year and fourth year students. Students who chose not to disclose their gender were excluded from gender-based analyses.

Results: 50% (n=38) of M4 students believed that working with attending physicians increased their understanding of the importance of compassion and empathy in patient care opposed to 34.3% (n=36) (p-value=0.034) of M3 students. 100% (n=78) of females and 89.2% (n=91) of males believed that providing empathy and compassion in patient care improved patient outcomes (p=0.003). Gender preferences for empathy education methods also proved to be significantly different. Among females, 2.6% (n=2) felt that auditorium lectures were an effective method to learn empathy in medical school while 10.8% of males (n=11) (p=0.035) felt it could be effective. Additionally, 53.8% of females and 32.4% of males felt that standardized patient encounters such as the objective structured clinical exams (OSCE) would be an effective medium for empathy education (p=0.004).

Conclusion: It was observed that medical students at MCW value and perceive empathy as a critical component of patient care. While the concept of empathy is variably subjective, MCW students found that direct interactions with attending physicians and patients positively influenced their own understanding of how to employ empathetic care. While the current model has its strengths, there is still room for growth regarding how medical students are trained and taught vital interpersonal skills, like empathy.

92) PROBABLE IRUKANDJI-LIKE SYNDROME IN THE UNITED STATES FLORIDA KEYS

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Sixteen of the world's fifty known species of box jellyfish are associated with Irukandji syndrome, which causes a multitude of delayed reactionary and potentially life-threatening symptoms. The primary species that release the potent fast acting Irukandji-causing venoms are the Carukia barnesi jellyfish, of the Carybdea genus. These box jellyfish are native to Australian waters where most of the Irukandji syndrome cases occur. However, cases of Irukandji-like syndrome have been reported worldwide after envenomations by Carybdea jellyfish. Herein we report a probable new case of Irukandji-like syndrome in the US Florida Keys, a region where Carybdea jellyfish have not been recorded. While it is unclear which exact jellyfish is the causal organism, the clustering incidents in the Florida Keys suggest a possible new box jellyfish or a member of the Carybdied genus are causing Irukandji-like syndrome in the area.

93) A SKIN LESION REVEALING SYSTEMIC MYCOSIS: A CASE OF DISSEMINATED BLASTOMYCOSIS WITH CUTANEOUS, PULMONARY, AND SPLENIC INVOLVEMENT

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Introduction: Blastomycosis is a systemic fungal infection that is caused by Blastomyces dermatitidis or Blastomyces gilchristii. Although the lungs are the primary site of infection, blastomycosis can disseminate to the skin, bones, genitourinary system, and, rarely, visceral organs, such as the spleen. Occupational exposure to soil and decaying matter, particularly among construction workers, increases the risk of blastomycosis infection.

Case Presentation: A 40-year-old male presented with a progressively enlarging right facial lesion, which initially appeared as a small bump. He reported a history of chest pain, dyspnea, and cough following a wisdom tooth extraction, which resolved prior to the onset of the facial lesion. The lesion gradually increased in size and pain over several months, reaching an 8/10 severity. The lesion was unresponsive to multiple courses of antibiotics. Additional symptoms included generalized fatigue, decreased appetite, weight loss, intermittent night sweats, and joint pain. Occupational history was notable for construction work with frequent soil and debris exposure. Maxillofacial CT demonstrated an exophytic skin lesion arising from the right cheek. There was no evidence of osseous destruction or deep cervical involvement. Chest CT revealed numerous lung micronodules and an area of nodular consolidation in the left upper lobe, which may represent pulmonary involvement of blastomycosis. The spleen appeared heterogeneous, potentially consistent with splenic involvement by disseminated fungal infection. Serum Blastomyces antigen was positive, and tissue culture grew Blastomyces. Pathology reported granulomatous lesions with fungal spores within the dermis. The patient was diagnosed with disseminated blastomycosis involving the skin, lungs, and spleen, with biopsy-proven cutaneous blastomycosis of the right face. He was initiated on amphotericin B induction therapy. He transitioned to oral itraconazole at discharge with plans for prolonged therapy. Broader infectious work-up was negative, and immunodeficiency screening was performed. The patient's facial lesion improved during hospitalization, and continued improvement was noted at follow-up.

Discussion: Cutaneous lesions can be valuable clinical clues to underlying systemic fungal infections, such as disseminated blastomycosis. This case also underscores the importance of obtaining a detailed occupational history when evaluating systemic fungal infections. Due to their exposure to soil and decaying matter, construction workers are at risk for blastomycosis, which may present with dissemination and atypical organ involvement, particularly the spleen.

94) A NOVEL CASE OF RECURRENT METASTATIC PLASMACYTOID UROTHELIAL CARCINOMA PRESENTING AS A RECTAL STRICTURE

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Introduction: Plasmacytoid urothelial carcinoma (PUC) is a rare, aggressive variant of urothelial carcinoma with a poor prognosis. Less than 20 cases of metastatic urothelial carcinoma presenting as a rectal stricture have been reported, with no known cases to our knowledge involving recurrent PUC. Here, we present a unique case of recurrent PUC presenting as a rectal stricture.

Case Description: A 57-year-old male with class III obesity, pilonidal cysts status-post incision and drainage with seton placement, and PUC (pT1N0M0) status-post radical cystoprostatectomy with ileal conduit 5 years prior presented with several months of rectal pain. Initial colonoscopy revealed inflammation characterized by rectal congestion, erythema, nodularity, and friability. Histology showed patchy lamina propria fibrosis, vascular congestion and focal crypt withering suggestive of ischemic injury. Computed tomography (CT) angiogram showed patent vasculature. Magnetic resonance imaging (MRI) demonstrated extensive proctocolitis of the rectum and distal sigmoid colon with extensive inflammation throughout the pelvis, perirectal soft tissues, and pelvic musculature. No autoimmune or infectious etiology was identified. The rectum was biopsied three other occasions without significant abnormality. Symptoms were refractory to steroids, antibiotics, and topical rectal therapies. He later presented to the emergency department with dizziness. CT abdomen revealed >20 cm of luminal narrowing in the distant sigmoid colon and rectum with proximal dilation concerning for partial obstruction. Endoscopic decompression was attempted and aborted, as the severe stenosis impeded passage of the endoscope; distal biopsies showed rare malignant cells, too few to characterize. Subsequent imaging revealed worsening colonic dilation and pneumatosis and he underwent a diverting loop ileostomy. Further rectal biopsies were obtained, revealing recurrent PUC involving submucosal colonic tissue.

Discussion: This case illustrates a rare recurrence of PUC manifesting as rectal pain and proctitis with resulting high-grade anorectal stricture. The presentation posed a significant diagnostic challenge, with multidisciplinary evaluation and repeat biopsies failing to reveal the cause. PUC often presents at an advanced stage and can spread to peritoneal surfaces. Recurrent malignancy should be considered in patients with a history of PUC and undifferentiated gastrointestinal symptoms, especially in the absence of alternative etiology identified at symptom onset.

95) EVALUATING THE ROLE OF THIRD-PARTY RESOURCES IN MEDICAL EDUCATION

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Background: Since the transition of the USMLE Step 1 exam to pass-fail grading in 2022, medical schools continue to experience declining pass rates (95% to 89%) without a clear reason as to why. Simultaneously, medical students continue to rely heavily on third-party resources (TPRs) to prepare for both institutional examinations and board examinations; however, relatively little research exists examining the efficacy of these resources when compared to traditional medical curricula. This paper aims to evaluate the role of TPRs to determine their impact on academic and Step 1 performance and to identify students at risk of failing Step 1.

Methods: Pre-clinical students reported patterns of TPR usage through a voluntary Qualtrics survey (n = 113). The survey results were then analyzed to investigate potential correlations between TPR usage and Clinical Basic Science Examination (CBSE) performance, Step 1 pass rates, and institutional examination performance.

Results: This study found high levels of TPR usage within the student body during the MS1 and MS2 years, 38% and 72% of all students respectively, with students primarily using institutional materials their MS1 year before changing to primarily TPRs their MS2 year ($p < 0.001$). Students who used institutional resources versus TPRs showed no difference between institutional exam scores, CBSE scores, or Step 1 pass rates. Students were identified as at risk for failing Step 1 if their average final exam scores were < 75% ($p < 0.001$), if they required reexaminations during the academic year ($p < 0.001$), or if they scored < 38% on the CBSE ($p = 0.001$).

Discussion: This study shows a high prevalence of TPR usage by medical students to prepare for the USMLE Step 1 exam, with the majority of students relying on them over institutional materials. Furthermore, there was no significant difference in Step 1 pass rates identified between these two study methods, nor did student academic performance on institutional exams differ significantly, indicating that TPRs are neither overly beneficial nor harmful to board exam preparation and suggesting that they may be an efficient tool for students to prepare. Due to their popularity with the student body, medical schools may consider embracing the student use of TPRs, providing them at a reduced cost to ensure a consistent studying approach amongst their students with the goal of increasing Step 1 pass rates. Finally, identifying at-risk students is required to combat declining pass rates, with this study showing that medical schools should focus specifically on students with lower final exam scores, lower CBSE results, and students who required reexaminations during the academic year. Schools must identify these students early and consider individualized mentoring to ensure a strong approach to Step 1 studying.


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