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70th Annual Wisconsin Scientific Meeting

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THE CASE OF A MARVELOUS ANOMALOUS AZYGOUS VENOUS SYSTEM ANASTOMOSING AN ENGROSSING PERSISTENT LEFT VENA CAVA TO THE OPPOSING CO-EXISTENT RIGHT VENA CAVA

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Clinical Vignette

Persistent left superior vena cava (PLSVC) is the most common thoracic vascular anomaly, typically developing when the embryonic left anterior cardinal vein fails to obliterate. While PLSVC usually drains benignly into the right atrium via the coronary sinus, in approximately 8% of cases, a failure of the left sinoatrial fold to develop can misdirect this anomalous vessel into the left atrium. This configuration allows thromboembolisms from systemic venous circulation to bypass the pulmonary vasculature, significantly increasing the long-term risk of paradoxical thromboembolism and stroke. This case report describes a rare anatomic variant discovered in a 40-year-old female. She was previously diagnosed at age 17 with a large atrial septal defect after suffering exercise intolerance throughout her entire childhood; this primary defect was successfully surgically repaired. Following a long asymptomatic period, she developed recurrent atrial tachyarrhythmias, presenting with a bout of atrial flutter at age 34 that was treated via percutaneous catheter ablation, followed by a second recurrence of atrial flutter at age 40. Venography performed during the subsequent attempted ablation revealed the unexpected presence of a PLSVC draining directly into her left atrium. Follow-up imaging with both a cardiac MRI and a nuclear perfusion scan further identified an active right-to-left shunt running through the azygous venous system, directly linking the normal right superior vena cava to the aberrant PLSVC. Embryologically, this specific adult anatomy indicates that several congenital structural cardiac abnormalities developed concurrently around six weeks gestation. First, the patient's proximal left anterior cardinal vein failed to regress, establishing the PLSVC. Second, the concurrent failure of the left sinoatrial fold's formation caused the PLSVC's direct left atrial drainage. Finally, the left common cardinal vein also failed to obliterate, preserving the embryonic anastomosis between the PLSVC and the left supracardinal vein, which forms the adult hemi-azygous system. Together, this preserved a continuous vascular pathway from the right superior vena cava, through the azygous and inter-azygous veins, into the hemi-azygous system, down the PLSVC, and straight into the left atrium. Because this extensive shunt carries a theoretical lifelong risk of thromboembolic events, intervention was required. However, due to the dense anatomical scar tissue from her prior pediatric cardiothoracic surgery and the extreme complexity of rerouting the azygous-PLSVC network, the procedural risks of thoracic surgery were too high to pursue. Consequently, a conservative medical management strategy was chosen, and the patient was placed on anticoagulation indefinitely with apixaban. So far, the patient has remained free of thromboembolism and has had no adverse major complications from the anticoagulation. This rare case highlights two important clinical teaching points. The first point: congenital vascular conditions must remain on the differential for adult patients presenting with recurrent or atypical cardiac arrhythmias, even decades after a primary defect repair. The second point: when surgical or transcatheter intervention is unsafe, appropriate medical management can be used to mitigate risk of systemic thromboembolism.

WHEN BREATH BECOMES HEMORRHAGE: CHORIOCARCINOMA SYNDROME PRESENTING AS ARDS

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Clinical Vignette

Introduction: Choriocarcinoma Syndrome is a rare spontaneous or chemotherapy-induced complication of choriocarcinoma that carries a poor prognosis and requires prompt identification and initiation of intensive chemotherapy. Most reported cases occur in the setting of high tumor burden and significantly elevated b-HCG. Patients can present with acute respiratory distress syndrome, pulmonary hemorrhage, hemoptysis, and hemothorax.

Case Presentation: A 54-year-old postmenopausal female former smoker, status post hysteroscopy 10 years prior for endometrial polyps with a recent normal pap smear and a past medical history of hypertension presented to primary care for shortness of breath and cough. She was prescribed albuterol, steroids, and azithromycin. Six days later, she presented to an outside hospital with ongoing shortness of breath, cough and scant hemoptysis. She denied other constitutional symptoms including fevers, night sweats, weight loss, chest pain, or abdominal pain. She reported recent exposure to a large amount of mouse feces when cleaning her garage without a mask. Laboratory studies demonstrated an elevated LDH of 582 IU/L, CRP of 6.0 mg/L, and WBC of14.6 u/L. Mild transaminitis was also noted with an AST of 58 U/L, and ALT of 74 U/L. An extended respiratory viral panel was negative. CT imaging of the chest was obtained revealing diffuse miliary and ground glass opacities in the bilateral lung fields. The patient subsequently developed progressive respiratory failure despite vancomycin, meropenem, doxycycline, Itraconazole, micafungin, and hydrocortisone. She was transferred to our facility where she was intubated and underwent urgent bronchoscopy.

Upon arrival, antibiotics were switched to cefotaxime, doxycycline, and amphotericin B. Steroids were discontinued given worsening clinical status and potential concern for disseminated fungal infection. She was able to extubate to high flow nasal cannula and repeat CT imaging was attempted but unsuccessful given significant orthopnea. Ultimately, extensive infectious and autoimmune workup was unrevealing, including PCR for hantavirus.

Given unclear etiology of progressive respiratory failure with diffuse pulmonary infiltrates, she underwent a right lung biopsy with thoracotomy. Post-operatively, she was unable to be weaned from the ventilator with worsening hypoxic respiratory failure. Pulse dose steroids were trialed with no improvement. A lung transplant was considered but felt to be contraindicated given the patient's BMI.Three days after the lung biopsy, preliminary pathology returned with adenocarcinoma. CT imaging of the chest, abdomen, and pelvis revealed diffuse pulmonary nodules, coalesced into consolidative opacities with progression to complete consolidation of the right lower lobe in addition to a pelvic mass with bilateral hydroureteronephrosis. Antimicrobials were discontinued. Unfortunately, her clinical status continued to decline with progressive multi-system organ failure, and she passed away the following day. Final pathology later confirmed the diagnosis of metastatic choriocarcinoma with a serum b-HCG of 558,697 U/L.

Discussion: This case demonstrates the rapid progression that can be seen in choriocarcinoma syndrome and highlights the importance of early recognition. While diffuse miliary and ground glass opacities are commonly associated with infectious and inflammatory etiologies, lymphohematogenous dissemination of aggressive malignancy should also be considered, especially when refractory to conventional treatments for acute respiratory distress syndrome.

LACTOCOCCUS GARVIEAE: A RARE CAUSE OF NATIVE VALVE INFECTIVE ENDOCARDITIS

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Clinical Vignette

Background: Lactococcus garvieae is a rare human pathogen, most commonly presenting as infective endocarditis (IE). It is a facultatively anaerobic, catalase-negative, gram-positive coccus that primarily causes hemorrhagic septicemia in warm-water fish. It has been increasingly recognized as a human pathogen, causing a range of clinical syndromes including urinary tract infection, liver abscess, and IE. To date, 31 cases of L. garvieae IE have been reported worldwide, and to our knowledge, none have been reported in the state of Wisconsin. Major risk factors include consumption of raw seafood, unpasteurized dairy products, prior valve surgery, gastrointestinal disease, and immunosuppression. Routine microbiologic testing is challenging, as L. garvieae typically appears in pairs or short chains on Gram stain and can share Lancefield group N antigen reactivity leading to easy misidentification as Enterococcus spp. or streptococci due to overlapping phenotypic characteristics. Definitive identification typically requires MALDI-TOF, with 16S rRNA sequencing as confirmation when MALDI-TOF results are ambiguous.

Case Summary: A 64-year-old man with a history of heart failure with mildly reduced ejection fraction, ischemic cardiomyopathy, coronary artery disease (status post coronary stent in 2016 and five-vessel CABG in 2024), and hypertension presented with three months of intermittent fevers, weight loss, and night sweats. He works as a farmer with frequent animal contact, regularly consumes unpasteurized cheese from local Amish farms, and had recently swum in Blackhawk Lake in Highland, Wisconsin prior to symptom onset. Physical exam revealed a new diastolic murmur and a splinter hemorrhage, raising concern for subacute infective endocarditis. Transthoracic echocardiogram showed an ejection fraction of 45% and a 1.8 cm aortic valve vegetation with severe aortic regurgitation; transesophageal echocardiogram identified an additional smaller aortic valve vegetation. CT imaging demonstrated splenomegaly and a new renal hypodensity concerning for septic emboli. He was empirically started on vancomycin and cefepime. Blood cultures (3 of 4 bottles) grew L. garvieae, which was largely pan-susceptible. He was referred to cardiac surgery for bioprosthetic aortic valve replacement. Intraoperative findings included an aortic root abscess with associated pseudoaneurysm, and valve cultures also grew L. garvieae. He was discharged on six weeks of intravenous ceftriaxone, followed by three months of oral penicillin VK prophylaxis.

Discussion: We present what we believe to be the first reported case of L. garvieae infective endocarditis in Wisconsin. This rare pathogen should be considered in patients presenting with a clinical syndrome consistent with IE who have exposure to fish or raw seafood, unpasteurized milk or cheese, or a history of valvular disease. Because L. garvieae is easily mistaken for Enterococcus spp. or streptococci on routine culture, MALDI-TOF or 16S rRNA sequencing may be needed for definitive identification. No formal treatment guidelines exist for L. garvieae IE; however, reported isolates have shown susceptibility to ampicillin, ceftriaxone, vancomycin, and fluoroquinolones, which may be reasonable options for empiric therapy pending susceptibility data. This case underscores the need for accurate species-level identification and highlights recreational freshwater exposure as an additional possible unrecognized risk factor.

ATYPICAL HEMOLYTIC UREMIC SYNDROME: A DIAGNOSTIC CHALLENGE IN POSTPARTUM THROMBOTIC MICROANGIOPATHY WITH RENAL IMPAIRMENT

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Clinical Vignette

INTRODUCTION: Atypical hemolytic uremic syndrome (aHUS) is a rare, life-threatening thrombotic microangiopathy (TMA) characterized by microangiopathic hemolytic anemia, thrombocytopenia, and acute kidney injury. Unlike secondary TMAs (e.g., Shiga toxin-associated HUS, severe hypertension, drug-induced TMA, and autoimmune-mediated TMA), aHUS results from uncontrolled activation of the alternative complement pathway, which may occur with or without an identifiable complement gene mutation. Pregnancy, particularly the postpartum period, is a well-recognized trigger and presents a diagnostic challenge because of its overlap with HELLP syndrome and thrombotic thrombocytopenic purpura (TTP). Early treatment with terminal complement inhibitors such as eculizumab can substantially reduce dialysis dependence and promote sustained hematologic remission.

CASE DESCRIPTION: A 30-year-old primiparous woman underwent forceps-assisted vaginal delivery complicated by postpartum hemorrhage requiring transfusion. She subsequently developed thrombocytopenia (65,000/μL), transaminitis, severe acute kidney injury with anuria and a peak creatinine of 8 mg/dL, and microangiopathic hemolytic anemia characterized by elevated lactate dehydrogenase (3,600 U/L), undetectable haptoglobin (<8 mg/dL), and few schistocytes on peripheral smear. ADAMTS13 activity was 55%, excluding TTP. DIC was considered but deemed unlikely given normal coagulation studies. Persistent hemolysis, thrombocytopenia, and worsening renal failure beyond 72 hours postpartum argued against HELLP syndrome. Following exclusion of alternative causes of TMA, a diagnosis of aHUS was made. Eculizumab therapy was initiated within three days of progressive acute kidney injury. Hemolysis resolved, with normalization of hematologic parameters within days of treatment (platelet count 196,000/μL and LDH 249 U/L); however, severe renal injury persisted, resulting in dialysis dependence for several months. A subsequent kidney biopsy demonstrated findings consistent with thrombotic microangiopathy.

DISCUSSION: Persistent thrombotic microangiopathy and worsening kidney injury after delivery should prompt early suspicion for aHUS, even when alternative pregnancy-associated TMAs are initially suspected. Timely exclusion of TTP, HELLP syndrome, and other causes of TMA, together with early involvement of hematology and nephrology specialists, is critical to establishing the diagnosis and facilitating prompt initiation of complement inhibition. This case highlights the diagnostic challenges of postpartum aHUS and underscores that, despite rapid hematologic remission with eculizumab, severe renal injury may persist and lead to prolonged dialysis dependence. Early recognition of postpartum aHUS remains essential to maximize renal recovery and improve long-term outcomes.

CIRCULATING TUMOR DNA VERSUS PET/CT FOR RELAPSE PREDICTION IN CLASSICAL HODGKIN LYMPHOMA: A SYSTEMATIC REVIEW

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Research (Basic or Clinical)

Background: Classical Hodgkin lymphoma (cHL) is highly curable, yet 10–30% of patients relapse. PET/CT is widely used for interim and end-of-treatment assessment, but has limited ability to accurately identify patients who will relapse. Circulating tumor DNA (ctDNA) enables ultrasensitive, non-invasive molecular monitoring and may improve relapse prediction. A systematic review was conducted on published evidence comparing ctDNA with PET/CT for relapse prediction in cHL.

Methods: PubMed was searched through May 2026 for original studies directly comparing ctDNA and PET/CT for relapse prediction in cHL. Extracted outcomes included sensitivity, specificity, positive and negative predictive values (PPV/NPV), hazard ratios (HR) for relapse or progression-free survival, and lead time of ctDNA detection relative to PET/CT. Owing to heterogeneity in ctDNA assays and assessment timepoints, results are reported as verified ranges rather than pooled estimates. Risk of bias was assessed using PROBAST criteria.

Results: Three prospective cohorts (total n=354; 44 relapses; median follow-up 2.5–5 years) met the inclusion criteria. ctDNA demonstrated higher sensitivity than PET/CT at all timepoints: interim assessment 67–77% versus 34–54%, and end-of-treatment 94% versus 63%. Specificity was also superior for ctDNA (78–100% interim; 96% end-of-treatment) compared with PET/CT (64–71% interim; 86% end-of-treatment). ctDNA PPV ranged from 55–100%, compared with 4–30% for PET/CT; in one interim cohort, ctDNA PPV was 100% versus 3.6% for PET/CT ($p<0.001$). ctDNA NPV ranged from 91 –99%, reaching 99.4% at end -of -treatment. ctDNA detected molecular relapse a median of 3.5–5.5 months earlier than PET/CT. ctDNA-positive status conferred a 10–13--fold increased relapse risk (HR 9.8–12.9, $p<0.001$), compared with approximately fourfold - risk for PET/CT positivity, indicating substantially stronger prognostic discrimination. Risk of bias was low to moderate.

Conclusions: Across published evidence, ctDNA demonstrates superior sensitivity, specificity, PPV, and earlier relapse detection compared with PET/CT in cHL, with the strongest performance at end-of-treatment. ctDNA provides a clinically meaningful 3–5--month lead time and markedly stronger prognostic discrimination. Limitations include small study numbers, heterogeneous assays, and the absence of prospective ctDNA-guided intervention trials.

RISK FACTORS FOR POSTOPERATIVE VENOUS THROMBOEMBOLISM AFTER HEPATIC RESECTION: A SYSTEMATIC REVIEW AND META-ANALYSIS.

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Research (Basic or Clinical)

Introduction: Hepatectomy constitutes a major surgical intervention associated with substantial perioperative changes in hemostasis. Despite coagulation parameters suggesting a bleeding tendency, hypercoagulable state frequently follows liver resection. Postoperative venous thromboembolism (VTE), including deep vein thrombosis (DVT) and pulmonary embolism (PE), remains a clinically important complication with significant impact on patient outcomes. Data suggests VTE occurs in 2-6% of post-hepatectomy patients and is associated with increased postoperative morbidity and mortality. Identification of predictors for VTE is essential for risk stratification and selection of appropriate thromboprophylactic strategies. No comprehensive meta-analysis has systematically evaluated determinants of VTE after hepatectomy, which highlights the necessity of the present study.

Methods: This systematic review and meta-analysis adhered to PRISMA and Cochrane recommendations and underwent prospective registration in PROSPERO (CRD420261346218). A comprehensive literature search of PubMed, ScienceDirect, Embase, and the Cochrane Library was performed through April 2026. Study quality and risk of bias assessment utilized ROBINS-I for non-randomized studies and RoB 2.0 for randomized studies. Dichotomous risk factors underwent pooled analysis with odds ratios (ORs) and 95% confidence intervals (CIs), whereas continuous variables underwent analysis with mean differences (MDs) and corresponding 95% CIs. Statistical significance was defined as $p<0.05$.

Results: Among 3,653 retrieved records, 14 studies satisfied eligibility criteria after exclusion of duplicates, non-comparative studies, and studies lacking VTE-specific outcomes, yielding a pooled cohort of 70,649 patients, including 1,982 with VTE. Overall risk of bias across included studies was low to moderate. Demographic factors associated with an increased risk of postoperative venous thromboembolism included advanced age (MD 2.80, 95% CI 1.39 to 4.20; $p < 0.00001$), male sex (OR 1.63, 95% CI 1.47 to 1.80; $p < 0.0001$), and higher BMI (MD 0.73, 95% CI 0.02 to 1.44; $p = 0.04$). Among medical history variables, hypertension (OR 1.23, 95% CI 1.08 to 1.39; $p = 0.001$) and ascites (OR 2.36, 95% CI 1.37 to 4.08; $p = 0.002$) were significantly associated with increased risk. Regarding operative factors, major extent of resection (OR 2.56, 95% CI 1.92 to 3.42; $p < 0.00001$), longer operative time (MD 63.39 minutes, 95% CI 26.80 to 99.90; $p = 0.0007$), greater intraoperative blood loss (MD 360.56 mL, 95% CI 159.08 to 562.11; $p = 0.0005$), and intraoperative red blood cell transfusion (OR 2.23, 95% CI 1.56 to 3.17; $p < 0.00001$) were all associated with a significantly increased risk of postoperative VTE. In contrast, laparoscopic resection was associated with a significantly lower risk of postoperative venous thromboembolism (OR 0.34, 95% CI 0.26 to 0.44; $p < 0.00001$).

Conclusion: This meta-analysis identifies distinct demographic, medical, and operative predictors of VTE after hepatectomy. Age, male sex, elevated BMI, hypertension, ascites, major hepatic resection, prolonged operative duration, greater blood loss, and intraoperative RBC transfusion demonstrated significant associations with increased VTE risk, whereas laparoscopic approaches showed a protective association. These factors may be useful for identifying who need earlier or extended thromboprophylaxis. However, most included studies were retrospective, larger prospective studies are needed to establish whether a hepatectomy-specific VTE risk score would meaningfully improve current practice.

AN ENTERIC CLUE: STREPTOCOCCUS CONSTELLATUS SEPTIC ARTHRITIS UNMASKING AN INFECTED AORTIC GRAFT WITH SUSPECTED AORTOENTERIC FISTULA

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Clinical Vignette

Introduction: Streptococcus constellatus, a member of the Streptococcus anginosus (milleri) group, is an oral and gastrointestinal commensal notorious for forming deep-seated, often polymicrobial abscesses. Its isolation from a sterile site remote from the gut should prompt a search for an occult visceral source. We describe a native knee septic arthritis caused by S. constellatus that unmasked a chronically infected aortoiliac graft with suspected aortoenteric fistula.

Case Presentation: A 68-year-old woman with coronary artery disease, peripheral arterial disease, and an aortoiliac bypass graft (2014) presented with six weeks of progressive left knee pain and effusion. Outpatient arthrocentesis revealed a synovial nucleated cell count of 63,000/μL with neutrophilic predominance, and cultures grew S. constellatus; an anaerobic gram-negative rod was recovered after five days. She was afebrile and hemodynamically stable on admission, with leukocytosis (white blood cell count 14,000/μL) and thrombocytosis. She underwent arthroscopic irrigation and debridement and was started on vancomycin and ceftriaxone.

Because S. constellatus is characteristically enteric and the patient was edentulous without an oral source, a gastrointestinal portal of entry was sought. Computed tomography of the abdomen and pelvis demonstrated gas within the aortoiliac graft with loss of the fat plane against an adjacent bowel loop and new right iliac occlusion, findings concerning for graft infection with aortoenteric fistula. Blood cultures remained negative and transthoracic echocardiography showed no vegetations, favoring transient bacteremia with hematogenous seeding of the joint over endocarditis. She was transferred to a tertiary vascular center and underwent open explantation of the infected aortoiliac graft. Her septic arthritis improved following irrigation and debridement with culture-directed antibiotics, with a planned six-week course (four weeks intravenous followed by oral step-down).

Discussion: Native-joint septic arthritis is usually hematogenous and most often due to Staphylococcus aureus or streptococci; the responsible organism can point to its origin. The S. anginosus group, and S. constellatus in particular, colonizes the oropharynx and gut and is strongly linked to abscess formation and enteric infection. Recovery of S. constellatus, especially alongside an anaerobic gram-negative rod, from a closed space distant from the abdomen should be treated as a microbiologic clue rather than a contaminant, prompting evaluation for a visceral source.

Aortic graft infection with secondary aortoenteric fistula is a rare but life-threatening complication that may present indolently, without gastrointestinal bleeding. Here, a peripheral septic joint, not abdominal symptoms, heralded the diagnosis, and negative blood cultures (likely reflecting prior antibiotics and intermittent seeding) did not exclude an endovascular source. This case illustrates how attention to the identity of a cultured pathogen can redirect a seemingly localized infection toward a hidden, organ-threatening process and prompt timely, definitive surgical management.

CONCURRENT SCAD AND TAKOTSUBO CARDIOMYOPATHY REVEALED BY CARDIAC MAGNETIC RESONANCE IMAGING ; A CASE REPORT

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Research (Basic or Clinical)

BACKGROUND: Myocardial injury can arise from both ischemic and non-ischemic mechanisms, which may coexist in the same patient. Distinguishing between overlapping etiologies is essential for appropriate management, particularly when coronary angiography is non diagnostic.

CASE: A 56-year-old woman with hypertension and hypothyroidism presented with recurrent chest pain radiating to both arms. Initial evaluation revealed severe hypertension and elevated high-sensitivity troponin (5,369 ng/L), with ST-segment elevations in the inferior and anterolateral leads. Emergent coronary angiography demonstrated non-obstructive coronary artery disease with approximately 50% stenosis in the mid-to-distal left anterior descending artery and first diagonal branch, with preserved TIMI 3 flow, suspicious for spontaneous coronary artery dissection (SCAD).

Left ventriculography and transthoracic echocardiography revealed reduced left ventricular ejection fraction (35–40%) with akinesis of the mid-to-apical segments and preserved basal function. Cardiac magnetic resonance imaging demonstrated subendocardial late gadolinium enhancement in the mid-to-apical anteroseptal wall and transmural enhancement with microvascular obstruction in the inferolateral wall, consistent with acute and prior myocardial infarction. However, the extent of wall motion abnormalities extended beyond infarcted territories, suggesting concomitant stress cardiomyopathy.

The patient was treated with dual antiplatelet therapy and guideline-directed medical therapy for heart failure, with clinical stabilization before discharge. Follow-up coronary angiography at 3 months demonstrated healing of the LAD and left circumflex SCAD. Repeat TTE showed improvement in septal mid-to-apical wall motion; however, an aneurysmal mid-to-apical lateral wall persisted, and LVEF remained unchanged.

CONCLUSION: This case illustrates how CMR can distinguish overlapping causes of myocardial injury when coronary angiography is nondiagnostic. Ischemic LGE identified SCAD-related myocardial infarction, while wall motion abnormalities extending beyond infarcted territories supported concurrent Takotsubo cardiomyopathy. Recognition of this uncommon overlap is essential, as reliance on angiography alone may fail to identify the full extent of underlying pathology.

SMALL BOWEL STRICTURE AND RECURRENT OBSTRUCTION IN IMMUNE CHECKPOINT INHIBITOR–INDUCED ENTERITIS: A RARE PHENOTYPE

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Clinical Vignette

Introduction: Immune checkpoint inhibitors (ICIs) are associated with immune-related gastrointestinal toxicity, most commonly involving the colon. Small bowel enteritis is less frequently reported and likely underrecognized. Stricturing disease is rarely described in ICI-related GI toxicity and, when reported, has involved the upper GI tract. Chronic stricturing small bowel disease with recurrent obstruction has not, to our knowledge, been previously characterized. We present a case of severe, refractory ICI enteritis with isolated ileal involvement progressing to stricturing disease and recurrent small bowel obstruction.

Case Description: A man in his 60s with metastatic melanoma treated with ipilimumab/nivolumab followed by nivolumab monotherapy developed severe diarrhea requiring hospitalization. Colonoscopy demonstrated a normal colon with ulcerated terminal ileum; biopsies showed active ileitis with normal colonic histology, and fecal calprotectin was markedly elevated. He improved with corticosteroids and infliximab, and ICI therapy was permanently discontinued because of enteritis and other immune-related adverse events. Persistent symptoms and a subsequent systemic infection prompted transition to vedolizumab, allowing subsequent tapering of the steroids. He later developed recurrent small bowel obstruction; imaging demonstrated distal ileal narrowing with proximal dilation, and colonoscopy identified a non-traversable distal ileal stricture. Biopsies again showed active ileitis without chronic or granulomatous features. After progression on vedolizumab, infliximab was restarted with dose escalation, but recurrent partial obstructions occurred whenever budesonide was tapered. He was maintained on infliximab and budesonide, achieving clinical stability, return to baseline function, and ongoing melanoma remission. Surgical resection was considered but deferred because of extensive ileal disease and clinical stability on medical therapy. He remained in complete metabolic remission for his advanced stage melanoma but he later died unexpectedly of an unknown cause.

Discussion: This case illustrates a rare stricturing phenotype of ICI-associated enteritis isolated to the small bowel, with recurrent obstruction despite sequential biologic therapies. Endoscopic findings in ICI enteritis typically include erythema and superficial ulceration; fixed strictures are rarely reported, and published cases have involved the upper GI tract rather than the distal ileum. Most reports of ICI enterocolitis emphasize acute complications—including perforation, toxic megacolon, and ischemic bowel—rather than chronic stricturing disease, leaving this presentation poorly characterized. Although stricturing disease is characteristic of Crohn's disease, repeated histopathology lacked chronic or granulomatous features, the patient had no personal or family history of inflammatory bowel disease, and pre-treatment imaging was normal, favoring a severe ICI-mediated inflammatory process over unmasked Crohn's disease. His consistent response to corticosteroids, including budesonide, suggests obstruction was driven largely by ongoing inflammation rather than irreversible fibrosis, an important distinction given limited evidence guiding medical versus surgical management of ICI-related strictures. Refractoriness to both anti-TNF and anti-integrin therapy further underscores the difficulty of achieving durable remission in this phenotype. Recognition of small bowel-predominant ICI enteritis is clinically important because persistent symptoms despite apparent colitis control should prompt early cross-sectional imaging, close surveillance for obstruction, and multidisciplinary consideration of medical and surgical strategies. Further studies are needed to define the natural history and optimal management of this rare but severe phenotype.

KIDNEY BIOPSY DURING PREGNANCY VS POSTPARTUM - EXPERIENCE FROM A SINGLE CENTER

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Research (Basic or Clinical)

Background: Kidney biopsy remains the gold standard in the diagnosis of kidney disease. However, its use during pregnancy remains controversial due to concerns for peri-procedural complications in the face of limited contemporary evidence on safety to mother and child, despite potential benefits in overall kidney outcomes.

Methods: We conducted a retrospective cohort study over a period of two decadesthat included females aged 18 or older who had undergone a native kidney biopsy either during pregnancy or within three months postpartum. Abstracted information from the electronic health records included demographics, clinical data, histopathological diagnosis, as well as maternal, fetal, and long-term renal outcomes. Kaplan-Meier analysis was used to evaluate kidney survival trends defined as time to dialysis initiation with statistical significance set to p value <0.05.

Results: Our cohort comprised 29 females who met inclusion criteria with 13 of whom were biopsied during pregnancy and 16 were biopsied within 3 months post-partum. The rate of complications between groups were low, similar in occurrence, and generally limited to small and self-limiting hematomas. Overall, long term kidney survival did not differ significantly between groups (log rank p=0.3), however changes in medical management was significantly greater in those biopsied during pregnancy (p=0.003).

Discussion: Although long term dialysis rates were similar between biopsy groups, the postpartum cohort had a shorter duration to initiation of dialysis with all 16 post-partum biopsies having initiated dialysis by 250 months post-biopsy. The most common pathology diagnosed in both biopsy groups was lupus nephritis followed by FSGS. Within both cohorts, nephrotic range proteinuria and a eGFR less than 60mL/min/1.73m2 were key predictors of progression to end stage renal disease (ESRD).

Conclusion: Although no statistically significant difference was observed in long-term kidney survival between biopsy timed during pregnancy versus postpartum, no significant differences in adverse outcomes were observed between biopsy groups. Additionally, the group that had biopsy during pregnancy had a longer interval to progression to ESRD and initiation of dialysis.

Medical Student Oral Vignettes

DIAGNOSTIC ACCURACY OF PERCUTANEOUS RENAL MASS BIOPSY COMPARED WITH NEPHRECTOMY PATHOLOGY: A 2,500-PATIENT SERIES

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Research (Basic or Clinical)

INTRODUCTION AND OBJECTIVES: Percutaneous renal mass biopsy (PRMB) is increasingly used to guide management of localized renal tumors, but few large studies have evaluated diagnostic performance across the full spectrum of outcomes, including nondiagnostic results, concordance for histologic subtype, and detection of high-risk pathologic features. We evaluated real-world diagnostic trajectories following nondiagnostic PRMB and quantified PRMB-nephrectomy concordance for histologic subtype, nuclear grade, and adverse morphologic features.

METHODS: A prospectively maintained database identified adults undergoing PRMB for a localized renal tumor at a single tertiary academic center between 2010 and 2025. Nondiagnostic PRMBs were defined as biopsies yielding only fibrosis, sclerosis, necrosis, benign parenchyma, or inadequate tissue. Among patients who subsequently underwent nephrectomy, PRMB and surgical pathology were compared for histologic subtype, nuclear grade, sarcomatoid differentiation, and rhabdoid morphology. Logistic regression evaluated predictors of nondiagnostic biopsy, histologic discordance, grade upstaging, and detection of high-risk features.

RESULTS: Of 2,500 PRMBs (median tumor size 3.2 cm), 308 (12.3%) were initially nondiagnostic; nondiagnostic results were more common among younger patients, smaller tumors, and CT-guided biopsies (all $p \leq 0.01$). A definitive diagnosis was ultimately obtained in 148 of these patients, most often via repeat biopsy, and malignancy was confirmed in 83.1% of cases. Among 862 patients who underwent nephrectomy, histologic subtype concordance with PRMB was excellent, exceeding 95% for clear cell, papillary, and chromophobe RCC. Exact nuclear grade concordance was 57%, improving to 68% when dichotomized as low (grade 1–2) versus high (grade 3–4); grade concordance declined with increasing tumor size, and larger tumor size independently predicted low-to-high grade upstaging (OR 1.07 per cm, 95% CI 1.02–1.12; $p=0.01$). Grade 4 nuclei, sarcomatoid differentiation, and rhabdoid morphology were identified in 109, 29, and 68 nephrectomy specimens, respectively; PRMB sensitivity for these features was low (36.7%, 13.8%, and 36.8%), despite specificity exceeding 99% for all three. Multi-quadrant sampling (at least 4 cores from separate tumor regions) was independently associated with improved detection of sarcomatoid or rhabdoid features (OR 4.67, 95% CI 1.48–14.73; $p=0.01$), but not with detection of grade 4 nuclei.

CONCLUSIONS: PRMB provides excellent accuracy for RCC histologic subtype, and most nondiagnostic biopsies are ultimately resolved with a definitive, often malignant, diagnosis after repeat sampling. However, PRMB frequently underestimates nuclear grade and high-risk sarcomatoid and rhabdoid features, particularly in larger tumors. Multi-quadrant sampling may improve detection of some high-risk features and warrants further study, but does not eliminate the risk of under-sampling aggressive pathology.

INFECTIOUS COMPLICATIONS FOLLOWING COMMERCIAL STEM CELL THERAPY: A PATIENT SAFETY PERSPECTIVE

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Clinical Vignette

Introduction: Stem cell therapies present tremendous potential for treating a wide range of diseases and improving quality of life. However, the growing appeal of regenerative medicine has led to a surge of commercial stem cell clinics that treat conditions ranging from osteoarthritis to Alzheimer's to COVID-19, despite limited clinical evidence of efficacy. Many of these products are marketed directly to consumers without FDA approval for these indications, raising significant patient safety concerns, including the risk of severe infectious and other procedure-related complications.

Case Presentation: A 79-year-old woman with a history of chronic neck pain underwent a commercially administered stem cell injection marketed for pain relief. Within weeks of the procedure, she developed progressively worsening right-sided neck pain that was initially attributed to degenerative cervical spine disease based on radiographic findings. Despite treatment with corticosteroids, muscle relaxants, analgesics, and physical therapy, her symptoms continued to worsen.

Magnetic resonance imaging demonstrated abnormalities of the skull base and upper cervical spine that were initially interpreted as advanced degenerative disease or inflammatory arthropathy, resulting in plans for interventional pain management. Over the following weeks, the patient experienced rapid clinical deterioration, developing dysphagia, hoarseness, generalized weakness, and unintentional weight loss. Repeat imaging revealed a rapidly progressive destructive process involving the clivus, C1, and C2 with basilar invagination, cervicomedullary compression, vertebral artery involvement, and pathologic fractures.

Although inflammatory arthropathy remained the leading diagnosis, transfer to a tertiary care center prompted reconsideration of an infectious etiology after the patient's daughter emphasized the temporal relationship between symptom onset and the commercially administered stem cell injection, raising concern for a procedure-associated complication. The patient underwent urgent biopsy and extensive occiput-to-C5 posterior decompression, instrumentation, and fusion. Operative cultures demonstrated polymicrobial skull base osteomyelitis caused by methicillin-resistant Staphylococcus aureus (MRSA), Corynebacterium species, Cutibacterium species, and anaerobic streptococci. Her recovery required multiple surgical procedures, prolonged hospitalization, months of enteral nutrition via gastrostomy tube, intensive physical, occupational, and speech therapy, and extended intravenous antimicrobial therapy with the possibility of lifelong antimicrobial suppression. At long-term follow-up, she remained free of recurrent infection with substantial recovery of swallowing and vocal function.

Discussion: This case illuminates the potentially catastrophic consequences of commercially marketed stem cell products that are promoted without high-quality evidence supporting their safety and efficacy. Although research is ongoing, there are currently no FDA-approved stem cell therapies for the treatment of osteoarthritis, joint pain, sports injuries, Alzheimer's disease, COVID-19, or aging. Nevertheless, hundreds to thousands of clinics across the United States continue to market unapproved stem cell interventions for these indications. Administration of these products places patients at risk of serious adverse events, with published reports describing vision loss, bacterial infections, and spinal cord lesions. This case further highlights the importance of maintaining a high index of suspicion for procedure-associated infections in patients presenting after commercial stem cell interventions and underscores the need for greater public awareness and stronger regulatory oversight of commercially marketed stem cell therapies that lack high-quality evidence supporting their safety and efficacy.

THE ASSOCIATION BETWEEN AREA DEPRIVATION AND COLORECTAL CANCER SCREENING COMPLETION IN A LARGE URBAN ACADEMIC CENTER

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Research (Basic or Clinical)

Background: Colorectal cancer (CRC) is the second leading cause of cancer death in the United States, but updated screening can reduce CRC-related morbidity and mortality. The rate of CRC screening has slowed, with marked disparities by race and socioeconomic status. The Area Deprivation Index (ADI) is a validated composite measure that incorporates various neighborhood-level factors to quantify deprivation by U.S. census block and can be used to measure multidimensional disparities. This study examined the association between ADI and the likelihood of updated CRC screening using electronic health data from a large urban academic health system in Milwaukee, Wisconsin.

Methods: This retrospective cohort study was conducted using electronic health records from a tertiary healthcare system in Southeast Wisconsin. Data was extracted from Clinical Research Data Warehouse. The cohort consisted of patients aged 45-75 years with at least one healthcare encounter from January 2025-December 2025, residence in Milwaukee county, and available ADI rank. Patients with a history of inflammatory bowel disease, prior CRC or high-risk colorectal procedures, or prior CRC diagnosis or procedure before the study period were excluded. The primary outcome was updated completion of CRC screening. The primary independent variable was ADI rank. Analysis included a descriptive analysis of characteristics between screened and unscreened patients and multivariable logistic regression models controlling for age, race/ethnicity, BMI, smoking status, and insurance type. Data extraction and preprocessing were conducted with a PostgreSQL environment. All analyses were performed with R-4.1.3 and statistical significance determined to be $p<0.05$.

Results: A total of 31,144 patients were included in the study, of whom 55.7% had updated CRC screening. Among those who did not have updated CRC screening, 26.4% resided in the most deprived ADI quartile (Q4), compared to 18.8% of those who did have updated CRC screening ($p<0.001$). In unadjusted analyses, compared to Quartile 1 (Q1), the least deprived ADI residences, those residing in Q3 (OR 0.85, 95% CI 0.79, 0.92) and Q4 (OR 0.61, 95% CI 0.56, 0.66) were less likely to complete CRC screening. After controlling for relevant covariates, this relationship remained significant only for Q4 compared to Q1 (OR 0.91, 95% CI 0.82, 0.99). In this analysis, both Medicaid and Medicare insurance coverage were negatively associated with updated CRC screening compared to private insurance (OR 0.646, 95% CI 0.600, 0.695 and OR 0.806, 95% CI 0.750, 0.866, respectively), while racial identification as Non-Hispanic White or "other race" was positively associated with updated CRC screening compared to Non-Hispanic Black identity.

Discussion: Compared to the least deprived ADI quartile, patients residing in the most deprived ADI quartile were less likely to complete CRC screening after controlling for relevant covariates (OR 0.905, CI 0.821, 0.997). Conclusions: Structural factors captured by the ADI influence important disparities in updated CRC screening, a relationship which is partially but not fully explained by racial identity, insurance type, and smoking status. Future work should further consider mechanisms of this relationship in order to identify potential interventions and ultimately ameliorate CRC cancer screening disparities.

ELSBERG SYNDROME FOLLOWING HSV-2 MENINGITIS DESPITE APPROPRIATE ANTIVIRAL THERAPY

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Clinical Vignette

Introduction: Elsberg syndrome (ES) is a rare HSV-2 associated lumbosacral radiculomyelitis. Less than 30 cases have been described in the largest published series, posing challenging diagnostic criteria and treatment recommendations. Because magnetic resonance imaging (MRI) may be normal and early symptoms can overlap with residual meningitis, diagnosis is difficult and requires a high index of clinical suspicion.

Case Presentation: We present the case of a 32-year-old transgender male with a history of migraine and attention-deficit/hyperactivity disorder, who presented with one day of severe headache, photophobia, nausea, vomiting, and bilateral lower extremity weakness. Examination demonstrated nuchal rigidity, positive Kernig and Brudzinski signs, and symmetric 4/5 lower extremity strength, suspicious for meningitis, and later confirmed by a positive CSF-PCR for HSV-2. Standard antiviral treatment was initiated for a course of 14 days. The patient received 4 days of IV acyclovir while inpatient and was subsequently discharged with 10 days of valacyclovir to complete the course.

Four days post discharge, he returned with worsening of his initial symptoms, despite strict adherence to valacyclovir at home. He was also experiencing new saddle anesthesia, urinary hesitancy, constipation, and progressive bilateral lower extremity weakness, all concerning symptoms for ES. At this time he had completed 8 days of his antiviral course. MRI of the entire spine demonstrated only chronic degenerative changes without evidence of myelitis or compressive disease. Given the characteristic neurologic syndrome occurring shortly after confirmed HSV-2 meningitis, ES was suspected and diagnosed. He was transitioned from PO valacyclovir back to IV acyclovir in conjunction with high-dose IV methylprednisolone. Within 72 hours, the patient experienced marked improvement in urinary symptoms, bowel function, lower extremity strength, and headache. The decision was made to extend his antiviral course to 21 days total, therefore, he was discharged with the remaining 9 days of valacyclovir and a prednisone taper.

Discussion: ES is an uncommon but potentially reversible neurologic complication of HSV-2 infection that may occur despite appropriate antiviral therapy. The core feature for diagnosis is radiculitis, which can be demonstrated by either clinical or MRI findings in the setting of confirmed HSV-2 infection. This case illustrates two important clinical lessons. First, new urinary dysfunction, saddle anesthesia, or progressive lower extremity weakness following HSV-2 meningitis should prompt immediate evaluation for ES, even when spinal MRI is unrevealing. Bilateral lower extremity weakness is not generally a symptom of meningitis and in this case may have been an early sign of ES which was missed during his initial admission. This highlights that ES must be considered even when just one of the core symptoms presents alongside HSV-2 meningitis.

Second, early recognition and escalation of treatment with intravenous antivirals and adjunctive corticosteroids were associated with rapid clinical improvement in this patient. Although evidence supporting corticosteroid therapy remains limited to case reports and small series, this case contributes to the growing literature suggesting a potential role for combined antiviral and corticosteroid therapy. Careful discharge counseling and close outpatient follow-up after HSV-2 meningitis may facilitate earlier recognition and management of this rare but treatable complication.

ENDOTHELIAL NUCLEOPORIN93 (NUP93) MAINTAINS VASCULAR HOMEOSTASIS VIA SUN1-DEPENDENT REGULATION OF RHOA/ROCK ACTIVITY

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Research (Basic or Clinical)

Background: As the innermost lining of blood vessels, endothelial cells (ECs) regulate barrier function, maintain vascular tone, and limit inflammation for vessel health. Involved in various fundamental endothelial processes, RhoA (Ras homolog family member A)/ROCK (Rho-associated coiled-coil containing protein kinase) signaling has been identified as a major contributor to age-associated hypertension and vascular disease. At the cellular level, RhoA/ROCK activity promotes EC permeability by disrupting intercellular junctions and reorganizing the actin cytoskeleton. RhoA/ROCK activity also impairs nitric oxide (NO) production, a vasodilator essential in improving blood flow and vascular homeostasis, to drive potent vasoconstriction. Recent studies identify Sun1 (Sad1 and UNC84 domain-containing protein 1), a key component of the linker of nucleoskeleton and cytoskeleton (LINC) complex, as a major repressor of RhoA/ROCK activity. Our latest studies identify endothelial loss of Nup93 (nucleoporin93), a component of the nuclear pore complex (NPC), as a hallmark of vascular aging. Insinuating a role for nuclear envelope components in vessel homeostasis, the role of Nup93 in RhoA/ROCK signal regulation, however, remains entirely unknown.

Methods: Targeted Nup93 knockdown (shNup93) approaches were used in primary human ECs to assess the role of Nup93 in endothelial RhoA/ROCK signaling and downstream readouts, including endothelial barrier function, cellular stiffness, cell-matrix adhesion, and eNOS (endothelial NO synthase) function. Rescue studies involved the utilization of pharmacological ROCK inhibitors (Y-27632; 10 μmol/L) and lentiviral mediated Sun1 restoration methods (Sun1-FLAG) and incorporated identical RhoA/ROCK signaling and downstream readouts as above. We additionally examined the contributions of endothelial Nup93 on vessel integrity by measuring baseline and stimuli-induced vascular permeability, flow-mediated vessel reactivity, and serum NO secretion in our novel inducible endothelial-specific Nup93 deletion mouse model.

Results: Here, we show that targeted loss of endothelial Nup93 significantly increases RhoA/ROCK activity for consequent enhanced endothelial permeability and decreased eNOS/NO bioavailability both in vitro and in vivo. Moreover, EC-specific Nup93 deletion leads to compromised flow-induced dilation in isolated mesenteric arteries, likely as a consequence of impaired eNOS function and NO secretion. Mechanistically, we find that loss of Nup93 drastically reduces endothelial Sun1 levels for a concomitant increase in RhoA/ROCK signaling presumably to drive the above aberrant endothelial phenotypes. Indeed, restoring Sun1 protein levels in Nup93-deficient ECs mitigates RhoA/ROCK activity without altering Nup93 or RhoA protein expression, thereby rescuing both endothelial barrier integrity and eNOS function.

Conclusions: Taken together, we demonstrate the presence of a regulatory mechanism between endothelial Nup93 and RhoA/ROCK signaling to impact downstream vascular permeability and NO-dependent vessel reactivity, contributing to the growing importance of nuclear membrane components in EC and vascular biology. Moreover, our studies highlight the existence of an NPC-LINC axis critical for nucleus-to-peripheral communication and EC health that is inadvertently disrupted with endothelial Nup93 loss.

CHARACTERIZING SOCIALLY ISOLATED PATIENTS IN THE HOSPITAL SETTING

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Research (Basic or Clinical)

Introduction: Social isolation is a prevalent condition associated with poor health outcomes and has been extensively studied in outpatient settings. However, socially isolated hospitalized patients remain an understudied population. The hospital setting provides an important opportunity to identify and screen these patients and address their social isolation. The objective of this study was to identify and characterize socially isolated patients in a US-based hospital setting.

Methods: Deidentified data was extracted via TriNetX for 556 patients admitted to Froedtert Hospital, a Midwestern academic medical center, in 2025, who were identified using ICD-10-CM codes Z60.2 (problems related to living alone) or Z60.4 (social exclusion and rejection). Descriptive analyses were performed to summarize patients' demographic characteristics, social determinants of health (SDoH), and comorbidities.

Results: Among the 556 socially isolated patients identified, the mean age (standard deviation) was 70.9 ± 15.3 years, with the majority aged 65 or older (n=397, 71.4%). The study population was predominantly male (n=319, 57.4%) and non-Hispanic White (n=402, 72.3%), followed by non-Hispanic Black (n=132, 23.7%). Most patients were unmarried, including single, widowed, divorced, or legally separated (n=491, 88.3%); and the remainder were married or living with a significant other. The majority of patients were retired (n=364, 65.5%) or non-employed (n=130, 23.3%).

Regarding SDoH, one quarter of patients (n=142, 25.5%) experienced some level of deficit, including low income (n=170, 30.6%) and financial strain (n=133, 30.6%). Food insecurity, housing insecurity, and transportation issues were reported infrequently, though missing or refused responses were substantial across all three domains.

Chronic physical comorbidities were common, with hypertension (n=465, 83.6%), heart disease (n=354, 63.7%), and cancer (n=307, 55.2%) affecting more than half of the population. Additional comorbidities included chronic kidney disease (n=255, 45.9%), obesity (n=252, 45.3%), diabetes mellitus (n=244, 43.9%), stroke (n=149, 26.8%), COPD (n=127, 22.8%), and liver disease (n=96, 17.3%). Mental health comorbidities were also prevalent, with depression (n=259, 46.6%) and anxiety (n=247, 44.4%) each affecting nearly half of the patient population.

Conclusion: Hospitalized patients identified as socially isolated were predominantly older, non-Hispanic White men who were unmarried, retired or unemployed, and had a high burden of chronic physical and mental health conditions, including a high prevalence of depression and anxiety. Financial hardship was the most commonly documented social determinant of health, while other social needs may be underrecognized due to substantial missing data. These findings highlight the hospital setting as a critical opportunity to identify socially isolated patients and implement targeted screening and interventions aimed at reducing social isolation and improving patient outcomes.

BABESIOSIS ON THE RISE IN WISCONSIN: A CAUTIONARY TALE FOR IMMUNOCOMPROMISED PATIENTS

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Clinical Vignette

Introduction: Babesiosis is a parasitic disease caused by the intraerythrocytic protozoa of the Babesia genus, most commonly B. microti in the upper Midwest and Northeastern United States. In an otherwise healthy individual, babesiosis presents with a spectrum of clinical symptoms and can appear asymptomatically in 20% of infected adults. Symptoms are most often characterized by a gradual onset of flu-like symptoms including malaise, fatigue, fever, headache, and nausea. These patients are often treated with appropriate antimicrobials and supportive care. However, in immunocompromised patients there are multiple reports of persistent and relapsing symptomatic babesiosis despite this standard of care.

Case Description: A 69-year-old male in Wisconsin with a PMHx of multiple myeloma, autologous stem cell transplant 30 years ago, and recent autoimmune hemolytic taking ongoing prednisone and rituximab presented to the ED with altered mental status and hematuria. Initial work-up found he was febrile (102.8) with pancytopenia, gross hematuria, and red blood cell smear showing intracellular organisms concerning for a parasitic infection. He was admitted to the hospital for further management and endorsed multiple potential tick bites over the past few months with no evident rashes. Pathology confirmed the presence of Babesia with 13% of red blood cells infected, and the patient was started on a six-week course of atovaquone and azithromycin therapy. He was discharged after 9 days when his symptoms resolved and a blood smear showed <1% infected red blood cells.

Two months later, the patient was admitted again with fever, fatigue, and altered mental status. Parasitic load was <1% on day one, increasing to 6% on day two. Azithromycin and atovaquone were restarted, and clindamycin was added to the antimicrobial regimen. After a week of persistent cyclical fevers, up to 103.3 F with diaphoresis, atovaquone-proguanil was started with significant clinical improvement. After 8 days in the hospital, the patient was discharged and instructed to finish the six-week course of prescribed antimicrobials while following with outpatient infectious disease. No parasites have been seen on blood smear since the hospital admission with repeated negative testing weekly. Babesia blood PCR remained positive after 5 weeks of antimicrobials, suspected to be due to non-viable residual organisms.

Discussion: Existing literature has demonstrated that patients who are immunocompromised are at high risk for severe babesiosis, which may be persistent, relapsing, or treatment resistant. Considering optimal clinical and antimicrobial management for this patient population remains important given medical advancements that are improving life expectancy for immunocompromised patients. This patient had a complex immune history and was not diagnosed with babesiosis until winter, despite the tick bite likely occurring during the prior summer. Patients may present with nonspecific symptoms that can mimic malignancy relapse, but noting geographic history is fundamental to assess all potential causes of their pathology.

SURVIVAL BENEFIT OF CHEMOTHERAPY WITH POSTOPERATIVE RADIATION IN RESECTED SALIVARY DUCT CARCINOMA

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Research (Basic or Clinical)

Purpose: Salivary duct carcinoma is a rare, aggressive salivary gland malignancy that frequently presents with high-risk clinicopathologic features. Although definitive surgery followed by postoperative radiation is commonly used for resected nonmetastatic disease, the role of adding chemotherapy remains uncertain. Prior studies evaluating adjuvant chemoradiation in salivary gland cancer have generally combined multiple histologies, limiting applicability to salivary duct carcinoma specifically. We evaluated the association between postoperative radiation with chemotherapy and overall survival among adults with resected nonmetastatic salivary duct carcinoma.

Methods: Adults diagnosed from 2010 through 2022 with invasive, nonmetastatic salivary duct carcinoma of a major salivary gland primary site were identified in the National Cancer Database. Patients were included if they underwent definitive primary-site surgery followed by postoperative radiation and had known chemotherapy status and survival outcomes. Patients receiving neoadjuvant systemic therapy, palliative treatment, immunotherapy, or hormone therapy were excluded. The primary exposure was receipt of chemotherapy as part of first-course treatment, categorized as postoperative radiation alone versus postoperative radiation with chemotherapy. The primary outcome was overall survival. Survival was compared using unadjusted Cox proportional hazards models and propensity score overlap-weighted Cox proportional hazards models. The propensity-score model included demographic, facility, tumor, and surgical/pathologic covariates. Sensitivity analyses evaluated patients receiving conventionally therapeutic radiation doses and a stricter concurrent-treatment definition requiring chemotherapy initiation within 14 days before or after radiation initiation. Secondary analyses were stratified by pathologic T category.

Results: The final cohort included 1,181 patients, of whom 753 received postoperative radiation alone and 428 received postoperative radiation with chemotherapy. Median reverse Kaplan-Meier follow-up was 57.1 months. Before weighting, patients receiving chemotherapy had more adverse clinicopathologic features, including more advanced nodal disease, greater nodal burden, more lymphovascular invasion, and more positive surgical margins. In the unadjusted Cox model, postoperative radiation with chemotherapy was not significantly associated with overall survival compared with postoperative radiation alone (hazard ratio [HR], 1.128; 95% CI, 0.927-1.374; $p = 0.229$). After propensity score overlap weighting, postoperative radiation with chemotherapy was associated with improved overall survival (HR, 0.645; 95% CI, 0.508-0.819; $p < 0.001$). This association remained consistent in sensitivity analyses restricted to patients with known radiation dose ≥5000 cGy (HR, 0.713; 95% CI, 0.550-0.924; $p = 0.010$), known radiation dose ≥6000 cGy (HR, 0.721; 95% CI, 0.554-0.939; $p = 0.015$), and concurrent postoperative chemoradiation (HR, 0.655; 95% CI, 0.513-0.836; $p < 0.001$). In pathologic T-stratified analyses, postoperative radiation with chemotherapy was associated with improved survival among patients with pT3-4 disease (HR, 0.589; 95% CI, 0.445-0.780; $p < 0.001$), but not pT1-2 disease (HR, 0.734; 95% CI, 0.446-1.209; $p = 0.225$). The treatment-by-pT interaction was not statistically significant.

Conclusion: In this national cohort of patients with resected nonmetastatic salivary duct carcinoma treated with postoperative radiation, receipt of chemotherapy was associated with improved overall survival after propensity score overlap weighting. The association remained robust across radiation-dose and concurrent-treatment sensitivity analyses and appeared most pronounced among patients with pT3-4 disease. These findings support further prospective evaluation of chemotherapy with postoperative radiation in salivary duct carcinoma.

MULTIPHASIC CT ANGIOGRAPHY FOR NON-TRAUMATIC INTRABDOMINAL BLEED IN THE EMERGENCY DEPARTMENT: IS IT TOO MUCH?

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Research (Basic or Clinical)

Background: Abdominal CT angiography (CTA) is commonly used to diagnose intra-abdominal hemorrhage. In a resource constrained emergency department (ED), imaging plays a role in diagnosis. Anecdotally we see more CTAs ordered to exclude all causes of abdominal pain, including non-traumatic intra-abdominal bleed (NTIB), sometimes without reasonable clinical justification.

Purpose: This study assesses whether routine portal venous (PV) phase CT is sufficient to diagnose NTIB in the ED setting.

Methods: An IRB approved retrospective review was performed of 319 multiphasic (non-contrast, arterial, PV) abdominopelvic CTA exams to exclude NTIB in the ED setting. Exam impression, dose length product (DLP), CT Dose Index volume (CTDIvol), and image number totals were extracted.

Gold standard clinical diagnosis for NTIB was defined by a combination of clinical suspicion, imaging, and subsequent interventional, endoscopic, or surgical findings. Positive imaging studies were reviewed by a reader to assess which phases findings were present to make diagnosis of NTIB. Sensitivity, specificity, positive predictive value (PPV), and negative predictive value (NPV) were calculated. Median (Interquartile Range (IQR)) total image number, CTDIvol, and DLP for full multiphasic CTA versus PV phase alone were calculated. Wilcoxon signed-rank test was performed to assess median differences in total versus PV image number, CTDIvol and DLP.

Results: NTIB prevalence was 15% (49/319). Imaging diagnosis of NTIB was made in 18% (56/319) patients on multiphasic CTA with sensitivity of 57%, specificity of 90%, PPV of 50%, and NPV of 92%. Evidence of NTIB was correctly identified on 89% (25/28) of arterial and 89% (25/28) of PV phases. Non-contrast phase was required in 3.6% (1/28) of exams. In cases of missed NTIB on PV phase, arterial phase was required in 3 cases of nephrostomy tube related bleeding. Median (IQR) image numbers for multiphasic and PV exams were 1454 (252) and 554 (97). Median (IQR) CTDIvol for multiphasic and PV phase were 53 (36) and 16 (12) mGy. Median (IQR) DLP for multiphasic and PV phases were 2688 (2011) and 846 (678) mGy*cm. All comparisons were statistically significant ($p < 0.001$).

Conclusion: Routine CT identified 89% of NTIB bleeds in this study population (equal to that of multiphasic CTA), while leveraging a 62%, 70%, 69% decrease in total image number, CTDIvol, and DLP. Low NTIB prevalence, exam positivity rate, and sensitivity suggest that multiphasic CTA in the ED may have low value as a screening exam. At the expense of longer interpretation times and radiation dose, CTA may have a better role as a follow-up study.

ARTERIAL STRESS TEST TO IDENTIFY OPTIMAL BLOOD PRESSURE CONTROL IN OLDER ADULTS

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Research (Basic or Clinical)

BACKGROUND: Hypertension (HTN) management in older adults primarily relies on resting brachial systolic blood pressure (SBP) alone, which overlooks dynamic vascular responses to physiologic stimuli. Resting measures may not fully capture the underlying vascular impairment or potential for adverse events. We sought to evaluate dynamic changes in arterial stiffness with acute exercise and pharmacological vasodilation in older adults with and without HTN.

METHODS: We enrolled 179 ambulatory, community-dwelling Veterans (≥ 60 years old) without known cardiovascular disease (CVD). Optimal blood pressure was defined as blood pressure of <130/80 mmHg. A 2-day "arterial stress test" evaluating responses to exercise on day 1 and sublingual nitroglycerin (NTG) on day 2 was completed. Incremental elastic modulus (IEM) and carotid to femoral pulse wave velocity (cfPWV) were measured at baseline and 10 minutes post-stimuli. Linear mixed effects models were performed to determine associations between arterial stiffness changes and blood pressure control.

RESULTS: Participants (70.3 ± 7.7 years old; 28% female) in the suboptimal group had higher SBP (144.5 ± 15.9 mmHg) compared to the optimal group (118.6 ± 13.3 mmHg). Arterial stiffness measures were higher in the suboptimal vs optimal group at baseline for both IEM (2664.0 ± 1062.1 mmHg vs 1880.8 ± 1025.9 mmHg) and cfPWV (9.1 ± 2.1 m/s vs 7.6 ± 1.7 m/s). Post exercise, SBP, IEM and cfPWV remained elevated in the suboptimal group during the recovery period (all models, $p<0.05$). Notably, post-NTG, SBP declined in both groups, yet IEM increased in the suboptimal control group (all models, $p<0.05$).

CONCLUSION: Hypertension is associated with abnormal dynamic arterial responses to physiological and pharmacological stress. Evaluating these dynamic responses beyond resting BP may better inform individualized SBP management and enhance cardiovascular risk stratification.

Resident Posters

1) MEDICATION ADHERENCE IN SLE AND RA: PREVALENCE AND PREDICTORS IN A NEPALI TERTIARY CARE COHORT

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Research (Basic or Clinical)

Currently, very little literature exists on drug adherence for rheumatological disorders in South Asia, although age-standardized point prevalence is not only highest in South Asia, but also has one of the highest age-standardized death rates and DALY (disability-adjusted life years) (1). It is unknown how many individuals with chronic disease adhere to drug therapy, especially in low- and middle-income countries (LMIC). The incidence and prevalence of systemic lupus erythematosus (SLE) and rheumatoid arthritis (RA) in many countries, including Nepal, is also unknown. The objective of this study was to describe the prevalence of medication adherence in patients with SLE and RA at a Nepali hospital and to describe factors that predict adherence.

A cross-sectional study was conducted at Patan Hospital, a tertiary care center in Nepal. Adults (≥18 years) with confirmed SLE or RA according to ACR and EULAR criteria who had been treated for a minimum of 3 months were recruited via convenience sampling. Patients with overlapping systemic rheumatic diseases were excluded. Medication adherence was measured using the validated Morisky Medication Adherence Scale (MMAS), categorizing patients with high (score 0), medium (1–2), or low (3–4) adherence. Sociodemographic and clinical data were collected via structured interviews. Associations were assessed using Spearman's correlation and chi-square tests. Multivariable binary logistic regression with 14 covariates (age, sex, marital status, disease type (RA vs SLE), household head education level, monthly family income, comorbidity, medication side effects, pain level, ethnicity, occupation, health insurance status, travel time to hospital, and prior ICU admission) was performed to identify independent predictors of adherence.

100 patients were enrolled: 50 SLE (mean age 31.5 years) and 50 RA (mean age 56.3 years); 88% were female. RA patients had higher adherence (58% vs 50%) but also more low adherence (18% vs 6%); SLE patients had a higher proportion of medium adherence (44% vs 24%). Multivariable logistic regression was significant for older age being independently associated with better adherence in RA (OR 0.91, 95% CI 0.85–0.98, $p = 0.016$) but not in SLE (OR 0.95, 95% CI 0.88–1.02, $p = 0.141$). Disease type was not independently associated with non-high adherence (RA vs SLE: OR 2.54, 95% CI 0.70–9.29, $p = 0.158$). No other covariate was statistically significant.

In this cohort, most patients with SLE or RA demonstrated at least medium medication adherence. Low adherence was more prevalent in RA than SLE patients, and age was the only independent predictor of non-high adherence in RA patients. These findings add to the sparse literature on rheumatological disease in LMIC and suggest that age-tailored interventions may be a practical target in resource-limited settings.

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2) CECAL BASCULE AS THE CAUSE OF RECURRENT ABDOMINAL DISTENTION IN A GERIATRIC PATIENT

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Clinical Vignette

Introduction: Cecal volvulus is an uncommon condition, accounting for only 1–3% of large bowel obstructions.[1] Cecal bascule—the rarest subtype, representing 5–20% of cecal volvulus cases—occurs when the cecum folds anteriorly on the ascending colon without significant torsion.[2] Although cecal bascule typically presents in patients aged 20-40, we describe an unusual case in an 84-year-old patient with recurrent abdominal distention.

Case Presentation: An 84-year-old male with a past medical history of severe aortic stenosis and anemia presented to the emergency department with recurrent abdominal distention. Notably, the patient was hospitalized for surgical repair of a right hip fracture a month prior, complicated by post-operative Ogilvie's syndrome requiring two endoscopic decompressions. On arrival the patient denied abdominal pain and was passing stool and gas. Initial labs showed baseline anemia and no other abnormalities. A CT scan of the abdomen and pelvis revealed a diffusely dilated colon with midline/right upper quadrant location of the cecum. Due to the extent of distention, cecal volvulus was suspected but there was no evidence of rotation suggesting possible cecal bascule. General surgery was consulted but did not pursue surgery as the patient was not acutely obstructed and was deemed high-risk secondary to severe aortic stenosis. Gastroenterology was consulted, the patient was made NPO, an NG-tube was placed for decompression, and all opiate and anticholinergic medications were held. He underwent endoscopic decompression with rectal tube placement which improved subjective distension and colonic dilation on abdominal radiographs. The patient was discharged home with cardiology and general surgery follow-up to discuss aortic valve replacement and subsequent partial colectomy.

Discussion: The pathophysiology of cecal bascule remains poorly understood due to limited case reports. Proposed mechanisms include congenital or acquired adhesions fixing the anterior cecum to the ascending colon, cecal malrotation, and coexisting conditions such as Ogilvie's syndrome and postoperative ileus.[3] Our patient exhibited multiple risk factors including prior abdominal surgery (cholecystectomy in 2020) with subsequent diagnosis of Ogilvie's syndrome, recent orthopedic surgery, and significant opioid exposure.

This case is notable for two reasons. First, cecal bascule in a patient over 80 is exceptionally rare - challenging the typical demographic pattern. Second, conservative management proved effective as an alternative to the typical surgical approach. Segmental resection remains the gold standard treatment for cecal bascule, while endoscopic decompression is traditionally considered ineffective.[4] Our patient's advanced age and prohibitive cardiac risk made surgery inadvisable initially, thus a combined medical and endoscopic management approach was successfully utilized as a bridge to future definitive treatment.

This case underscores the importance of maintaining high clinical suspicion for cecal bascule in patients with recurrent colonic distention and emphasizes the value of multidisciplinary collaboration when anatomic findings suggest volvulus, but clinical presentation permits conservative stabilization.

3) STREPTOCOCCUS CRISTATUS BACTEREMIA MASQUERADING AS ACUTE HYPOXEMIC RESPIRATORY FAILURE

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Clinical Vignette

Background: Streptococcus cristatus is a viridans group streptococcus native to the oral cavity and generally regarded as a commensal organism. Human infections are rare but are highly likely to cause infective endocarditis. Once bacteremic, endocarditis occurs as often as ~41% of the time. Identification of S. cristatus in blood cultures should prompt evaluation for both an odontogenic source and endovascular infection.

Case Presentation: A 43-year-old woman with asthma, prior pulmonary embolism, and untreated obstructive sleep apnea presented with hoarseness, throat tightness, cough, and two days of nausea, vomiting, and diarrhea. On admission, she was tachycardic (121 bpm) and tachypneic (30 breaths/min) with leukocytosis (13.1×10^9/L) and lactic acidosis (3.7 mmol/L). Due to rapid development of encephalopathy, she was placed on BiPAP and transferred to the medical intensive care unit. Initial chest radiography and computed tomography of the chest, abdomen, and pelvis were unrevealing. She had multiple similar admissions over the past year for asthma exacerbation and medication non-compliance, and this was initially thought to be the cause of her presentation.

Although her respiratory status improved with supportive care, blood cultures obtained in the emergency department subsequently grew S. cristatus in 2/2 bottles. Infectious Diseases consultation prompted evaluation for infective endocarditis and an odontogenic source. Panorex imaging demonstrated extensive maxillary dental caries with periapical lucencies consistent with advanced periodontal disease. Transthoracic echocardiography revealed a mobile linear echodensity concerning for endocarditis; however, transesophageal echocardiography showed no valvular vegetations. Given the severity of her dental disease and presumed odontogenic bacteremia, she underwent complete dental extraction. She completed a 7-day course of intravenous ceftriaxone and was discharged without complications.

Discussion: S. cristatus is an uncommon human pathogen with only a limited number of reported cases in the literature. This case highlights how odontogenic bacteremia may present with nonspecific systemic manifestations that initially obscure the underlying source. Clinicians should maintain a high index of suspicion for occult dental sources of infection. Finally, positive cultures warrant investigation for bacterial endocarditis with echocardiogram due to the pathogenicity of S. Cristatus.

4) A MYSTERIOUS CASE OF VASCULITIS WITHOUT A TELL: ARTERITIS OF THE GIANT CELL

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Clinical Vignette

Giant cell arteritis ("GCA") is one of the most common vasculitides affecting nearly 1% of women and 0.5% of men; most commonly it strikes between ages 70 and 79. GCA is characterized by granulomatous inflammation of large and medium-sized arteries caused by inappropriately activated dendritic cells releasing cytokines to recruit Th17 lymphocytes and activate nearby macrophages. This inflammatory response creates the pathognomonic "giant cells," arterial smooth muscle hypertrophy, and a systemic inflammatory response. GCA's classic presentation can involve headache, jaw claudication, vision loss, constitutional symptoms, transient ischemic attacks, and arterial dissections. Here we present a 79-year-old gentleman who initially presented to the ED with vague constitutional symptoms and fever. Because of a recent tick bite, he was initially discharged to home with doxycycline for Lyme. However, he was admitted five days later with unresolved symptoms. A broad infectious work-up was negative, but CRP and ESR were extremely elevated to over 18 mg/dL and 90 mm/hour respectively. Again, the patient was discharged, despite negative Lyme serologies, with a diagnosis of Lyme (given that Lyme disease can be seronegative if serologies are obtained too soon). However, he was admitted only three days later with the same symptoms, as well as paranoia and confusion. He never had jaw claudication, headaches, or vision changes. A repeat CRP and ESR continued to show extreme elevation. Extensive diagnostic screening—including a chest, abdomen, and pelvis CT, broad autoimmune serologies (ANA, ANCA, dsDNA, CCP, and a vasculitis panel), viral PCRs, and blood cultures—was unremarkable. A brain MRI and a lumbar puncture further ruled out acute intracranial pathology or encephalitis. Finally, a temporal artery sonogram showed convincing evidence of GCA (arterial intimal thickening with intra-arterial peak flow velocities well above the cut-off of 90 cm/sec) which was then confirmed with biopsy and histology (which showed the characteristic intimal thickening and internal elastic lamina fragmentation). The patient was started on 80 mg of prednisone; within 12 hours of his first dose, the neuropsychiatric symptoms were nearly completely resolved. He was discharged the following day with follow-up to outpatient rheumatology. This case showcases a rare presentation of GCA without any notable headache, jaw claudication, or visual symptoms, instead manifesting exclusively as altered mental status with elevated inflammatory markers. It also shows that when inflammatory markers are profoundly elevated, a definitive diagnosis is vital; the differential for this is limited to severe pathologies (it is largely limited to active autoimmune disease, malignancy, and severe infections). If the diagnosis had been delayed in this case, subsequent intervention with glucocorticoids would have been delayed, which could have resulted in irreversible ischemic vision loss or mortality.

5) MISSING THE FOREST FOR THE TREES: CALCIPHYLAXIS WITHOUT RENAL DISEASE

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Clinical Vignette

Calciphylaxis is a rare condition usually associated with end-stage renal disease and dialysis. It affects well under 0.35% of hemodialysis patients. Nonuremic calciphylaxis (NUC) is a type of calciphylaxis that is not associated with renal disease; it is significantly rarer than typical calciphylaxis, with at least one systematic review finding only 36 reported cases in the literature and other investigations suggesting that only around 20% of calciphylaxis cases are NUC. When NUC does occur, it is generally associated with hyperparathyroidism, malignancy, liver disease, connective tissue disease, autoimmune conditions, hypoalbuminemia, hypercalcemia, diabetes, obesity, corticosteroid use, and warfarin. Calciphylaxis pathophysiology is poorly understood in general but is histologically characterized by arterial medial calcification and thickening leading to thrombosis and ischemia; some sources speculate that the calcification involves deregulation of vascular calcification inhibitors. The treatment modalities for all calciphylaxis cases are limited and the outcome is grim. The prognosis for NUC is even worse with a 1-year mortality estimated to be 50-75%. Here we present a case of a 53-year-old female with morbid obesity, sleep apnea, lymphedema, and inactive granulomatosis with polyangiitis (GPA). Notably, there was never known renal disease; her GPA was never associated with renal involvement. The patient initially suffered a fall resulting in a skin tear on her right leg. Over the course of about 1.5 years, the clinical course was complicated by nonhealing and infection which was treated with regular home health wound visits and surgery. During one of her wound appointments, new bilateral thigh wounds were noticed; these were attributed to skin breakdown from urinary incontinence. These wounds also required surgical debridement and were complicated by infection. She was hospitalized twice in 4 months for surgical debridement and IV antibiotics. During the second hospitalization, the medicine service was consulted due to concern for elevated troponin. Troponin was flat but the patient did show evidence of fluid overload on exam; a TTE was obtained and she was diagnosed with diastolic heart failure and diuresed adequately. The patient seemed to do poorly after her surgical wound debridement and the medicine service was asked by the surgery service to evaluate the wounds; the appearance did not seem suggestive of active GPA. The wound biopsy came back positive for calciphylaxis. The patient had never had an abnormal creatinine. ESR and CRP were non-elevated and ANCA antibodies were undetectable, supporting that the GPA was inactive. Parathyroid hormone and calcium were normal. She had never been treated with warfarin. After discussing prognosis, the patient opted for hospice. She passed away about a month after diagnosis. This case highlights the clinical manifestations of an extremely rare pathology (fatal nonuremic calciphylaxis with no evidence of malignancy, hyperparathyroidism, warfarin use, or active autoimmune process) as well as the importance of considering etiology in wound evaluation. It also demonstrates NUC's extremely poor prognosis and shows that early involvement of palliative care should always be considered for these patients.

6) BRADYCARDIC ARREST IN A PATIENT WITH DIABETIC KETOACIDOSIS WITH SEVERE ACIDEMIA AND HYPERKALEMIA: A CASE REPORT

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Clinical Vignette

Introduction: Hyperglycemic emergencies represent around 1% of hospital admissions among diabetic patients. Diabetic ketoacidosis and hyperglycemic hyperosmolar state are two distinct diagnoses, though around one-third of patients present with mixed DKA and HHS. Management of hyperglycemic emergencies is well-established and has become standardized among most institutions, which can make management seem routine. However, this case report describes a rare, but serious complication of hyperglycemic emergency, and highlights the importance of prompt evaluation and treatment of patients with hyperglycemic emergencies.

Case:A 46-year-old female with a past medical history of insulin-dependent type 2 diabetes mellitus presented to the emergency department with nausea, vomiting, and lethargy. Laboratory findings were consistent with mixed DKA and HHS, including blood glucose 1,236 mg/dL, venous pH 7.10, beta-hydroxybutyrate >8.0 mmol/L, serum osmolality 366 mOsm/kg, and potassium 6.6 mmol/L. On arrival, a point-of-care blood glucose was >600 mg/dL. IV fluids and IV insulin were started 57 minutes and 100 minutes, respectively, after arriving to the ED. At 112 minutes after arrival, the critical care team was consulted for admission to the ICU. At 132 minutes after arrival while awaiting transfer to the ICU, the patient experienced a bradycardic arrest, and advanced cardiac life support was initiated with successful return of spontaneous circulation after 3 minutes. The patient was subsequently transferred to the ICU for continued treatment of mixed DKA and HHS, and post-cardiac arrest management. She made a full recovery without any lasting neurological or cardiac deficits.

Discussion: Cardiac arrest is a rare complication of DKA/HHS. There are very few case reports describing bradycardic arrest in the setting of DKA/HHS, though most describe quick resolution and favorable outcomes following DKA treatment.

Acidemia and hyperkalemia are two underlying metabolic derangements in DKA associated with cardiac abnormalities and arrhythmias. In hyperkalemia, adverse events are most often associated with bradycardia (RR 12.29), junctional rhythms (RR 7.46), and QRS prolongation (RR 4.74). Notably, peaked T waves were not associated with short-term adverse events. Although EKG changes are helpful in identifying possible impending adverse events, 50-60% of patients with hyperkalemia won't have EKG changes. Severe acidemia is also associated with several cardiac abnormalities, including decreased cardiac contractility, diminished responses to catecholamines, and a proarrhythmic state.

It is unclear if quicker management with insulin would have affected this patient's outcome, but it certainly would have minimized the ongoing risk associated with persistent acidemia and hyperkalemia. With each of these metabolic derangements being independently associated with cardiac abnormalities, prompt recognition and treatment of hyperglycemic emergencies is essential to minimize the risk of adverse cardiac events.

Conclusions: Hyperglycemic emergencies like DKA and HHS are common diagnoses seen by hospitalists and intensivists. Although serious complications are rare, acidemia and hyperkalemia in these patients can precipitate bradyarrhythmia. This case adds to the limited literature describing bradycardic arrest in DKA patients, a rare complication of a common hospital diagnosis. Prompt recognition and treatment is essential, and oftentimes, admission to the ICU is warranted to ensure appropriate management and to closely monitor these patients.

7) WHEN GOUT FLARES IN CARDIORENAL DISEASE: COLCHICINE VERSUS NSAIDS AND 30-DAY SAFETY OUTCOMES

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Research (Basic or Clinical)

BACKGROUND: In CKD or HF, acute gout treatment is limited by NSAID renal, gastrointestinal, and volume-related toxicity and colchicine renal-clearance concerns. Head-to-head trials of colchicine, NSAIDs, and corticosteroids for acute gout flares have demonstrated equivalent efficacy in the general population, but none enrolled patients with advanced CKD or decompensated HF, leaving clinicians to navigate competing pharmacologic risks without direct comparative safety data. Current guidelines favors low-dose colchicine or glucocorticoids over NSAIDs in CKD, but acute-flare comparative data in cardiorenal disease remain limited.

AIMS: To compare 30-day safety and utilization outcomes after colchicine versus NSAID initiation for acute gout flares in adults with CKD stage 3-5 and/or HF.

METHODS: We performed a TriNetX Global Collaborative Network retrospective compare-outcomes analysis across 15 healthcare organizations. Adults ≥18 years with ICD-10-CM cardiorenal disease (I50 or N18.3-N18.5) and acute gout (M10) were included. The colchicine cohort required first colchicine exposure within 3 days on/after gout diagnosis; the NSAID cohort required celecoxib, diclofenac, ketorolac, meloxicam, ibuprofen, indomethacin, naproxen, or piroxicam within 3 days on/after gout diagnosis. Outcomes occurred from NSAID/Colchicine start through 30 days, excluding patients with that outcome before the window. Propensity score matching yielded 24,326 patients/cohort.

RESULTS: After matching, colchicine was associated with lower 30-day AKI than NSAIDs (4.60% vs 6.60%; RD -2.00 percentage points [pp], 95% CI -2.40 to -1.50; RR 0.70, 95% CI 0.64-0.77; HR 0.70, 95% CI 0.64-0.76; RD and log-rank $p<0.01$).

GI bleeding was also lower, though the absolute difference was small (1.00% vs 1.30%; RD -0.20 pp, 95% CI -0.40 to 0.00; RR 0.82, 95% CI 0.68-0.97; RD $p=0.02$.

HF events were lower with colchicine (5.00% vs 6.50%; RD -1.40 pp, 95% CI -2.00 to -0.90; RR 0.78, 95% CI 0.71-0.85; HR 0.77, 95% CI 0.70-0.85; RD and log-rank $p<0.01$).

Steroid rescue was similar (29.10% vs 30.00%; RR 0.97, 95% CI 0.93-1.01; HR 0.96, 95% CI 0.91-1.01; RD $p=0.14$; log-rank $p=0.11$).

ED visits (8.30% vs 13.30%; RD -5.00 pp; HR 0.61, 95% CI 0.57-0.67) and all-cause hospitalizations (10.90% vs 14.90%; RD -3.90 pp; HR 0.73, 95% CI 0.68-0.77) were lower with colchicine; both had RD and log-rank $p<0.01$.

DISCUSSION/CONCLUSION: These findings fill a guideline-relevant evidence gap by comparing acute gout flare therapies in a high-risk cardiorenal population commonly excluded from trials. Colchicine was associated with more favorable 30-day renal, HF, GI, ED, and hospitalization outcomes than NSAIDs, supporting its preferential consideration for acute gout flares in adults with CKD stage 3-5 and/or HF.

8) WHO GETS REMOTE BLOOD PRESSURE MONITORING AFTER SEVERE UNCONTROLLED HYPERTENSION? REAL-WORLD CHARACTERISTICS AND EXPLORATORY OUTCOMES

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Research (Basic or Clinical)

BACKGROUND: The 2025 AHA/ACC hypertension guideline emphasizes timely outpatient evaluation and treatment intensification for severe hypertension without acute target-organ damage and supports team-based care using telehealth and out-of-office blood pressure monitoring. Remote physiologic monitoring (RPM) may improve hypertension management, but real-world patient selection after severe uncontrolled hypertension remains poorly characterized.

AIMS: To compare baseline demographic and clinical characteristics of adults receiving RPM versus office-based follow-up after severe uncontrolled hypertension and evaluate exploratory cardiovascular, renal, and acute-care outcomes.

METHODS: We performed a TriNetX Global Collaborative Network retrospective cohort analysis. Adults aged ≥18 years were included if they met the criteria for severe uncontrolled hypertension diagnosis on or after June 1, 2000. The criteria required essential hypertension with blood pressure or hypertensive disease criteria including systolic BP ≥160 mmHg, diastolic BP ≥110 mmHg, hypertensive urgency, hypertensive heart disease, hypertensive CKD, or hypertensive heart and CKD. Cohort 1 required RPM within 1 month after severe uncontrolled hypertension using CPT 99091, 99453, 99454, 99457, or 99458. Cohort 2 required office follow-up within 1 month using CPT 99202-99205 or 99211-99215 and excluded RPM or self-measured BP monitoring. Propensity score matching generated balanced cohorts.

RESULTS: Before matching, 509 RPM patients and 569,992 office-follow-up patients were identified; after matching, 507 remained per cohort. Before matching, RPM patients had older age at index (67.1 vs 63.3 years, $p<0.0001$), higher BMI (34.2 vs 31.3 kg/m2, $p<0.0001$), and higher prevalence of obesity (68.2% vs 35.5%), heart failure (61.7% vs 28.0%), type 2 diabetes (60.5% vs 36.3%), CKD (56.4% vs 33.6%), ischemic heart disease (50.5% vs 32.6%), Black race (29.5% vs 15.5%), prior cerebral infarction (13.8% vs 8.5%), and TIA (10.6% vs 5.3%), all $p<0.0001$. After matching, most standardized differences were <0.10. Exploratory outcomes showed no significant differences in acute myocardial infarction (12/414 [2.9%] vs 14/407 [3.4%]; RD -0.54%, 95% CI -2.94 to 1.86; RD p=0.658; RR 0.84, 95% CI 0.39-1.80; OR 0.84, 95% CI 0.38-1.83) or AKI (17/245 [6.9%] vs 30/326 [9.2%]; RD -2.26%, 95% CI -6.73 to 2.21; RD p=0.330; RR 0.75, 95% CI 0.43-1.34; OR 0.74, 95% CI 0.40-1.37). ED visits were numerically higher with RPM (17/56 [30.4%] vs 22/125 [17.6%]; RD 12.76%, 95% CI -1.01 to 26.53; RD p=0.054; RR 1.72, 95% CI 1.00-2.99; OR 2.04, 95% CI 0.98-4.24).

DISCUSSION/CONCLUSION: RPM use after severe uncontrolled hypertension was uncommon but concentrated among older, clinically complex patients with greater cardiometabolic, renal, and cardiovascular disease burden. Exploratory matched analyses showed no significant AMI or AKI differences, while ED utilization was borderline higher. These findings characterize real-world RPM deployment in a high-risk hypertension population and support larger studies evaluating whether targeted RPM improves guideline-relevant long-term outcomes.

9) GETTING UNDERNEATH YOUR SKIN: A RARE CASE OF MANTLE CELL LYMPHOMA OF THE DIFFUSE SUBCUTANEOUS TISSUES

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Clinical Vignette

Introduction: Mantle Cell Lymphoma is a rare B-Cell Lymphoma. Skin involvement is very rare and presents a unique diagnostic challenge.

Case Presentation: A 77-year-old man with a history of chronic lymphocytic leukemia undergoing surveillance presented with a six-month history of cheek swelling. Physical examination revealed facial swelling and plethora in addition to diffusely indurated skin with woody-like texture most pronounced throughout the cheeks but palpable across the chest, abdomen, back, neck, and extremities. Laboratory testing revealed a mild lymphocytosis, macrocytic anemia, and thrombocytopenia. Computed tomography imaging demonstrated new lymphadenopathy in addition to diffuse mass-like thickening of the subcutaneous soft tissues throughout the entire body including involvement of the face and extraocular muscles. PET/CT imaging demonstrated diffusely abnormal hypermetabolic activity throughout the subcutaneous tissues of the face, neck, chest, abdomen, pelvis, and proximal upper/lower extremities. Scleromyedema was considered but no paraprotein was identified leading to a bone marrow biopsy which revealed chronic lymphocytic leukemia in addition to mantle cell lymphoma involving 50% of marrow cellularity. Concurrent, skin punch biopsy of the right upper arm demonstrated subcutaneous involvement by mantle cell lymphoma, a rare manifestation of advanced disease. Treatment was initiated with bendamustine and rituximab. After 6 cycles of therapy, follow-up PET/CT imaging showed pronounced interval decrease in skin and subcutaneous soft tissue thickening with marked reduction in hypermetabolism. In addition, clinical exam revealed marked improvement in facial swelling, plethora and skin induration. The patient remains in clinical remission at last follow-up.

Discussion: Given the rarity of skin involvement, Mantle Cell Lymphoma of the skin can go misdiagnosed or lead to delayed diagnosis. Only case reports and case series are available in the literature and determining a typical distribution to aid physicians would be very difficult. The clinical presentation of mantle cell lymphoma is highly variable which can also contribute to the diagnostic challenge. This case highlights a rare presentation of mantle cell lymphoma with diffuse subcutaneous infiltration and emphasizes the need for heightened vigilance for this disease to guide effective diagnostic testing and treatment.

10) PREDICTIVE VALUE OF PRE-PROCEDURAL HEPATIC SCORING SYSTEMS FOR POST-TIPS OUTCOMES

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Research (Basic or Clinical)

Introduction: Transjugular Intrahepatic Portosystemic Shunt (TIPS) is a minimally invasive procedure used to reduce portal pressure by rerouting flow to the hepatic vein. A complication of TIPS is an increased risk of hepatic encephalopathy (HE). Pre-procedure scoring instruments like MELD, Child-Pugh, FIPS, and MOTS are used to risk stratify patient outcomes but the complex nature of cirrhotic patients impact their utility. We compared scoring instruments in predicting mortality and HE post-TIPS in a real-world cohort and examined the influence of co-morbid conditions.

Methods: A query was completed through TriNetX and a Medical College of Wisconsin data warehouse. Of the 470 patients identified between 1995-2023, 230 had sufficient lab data within 30 days prior to TIPS to calculate pre-procedural assessment scores. Post-TIPS 30- and 90-day mortality and incidence of HE was compared to pre-procedural scoring assessments. Patient demographics and active diagnoses documented. Chi-square performed to assess independent predictors of HE and mortality. Area under the curve (AUC) graphs used to compare scoring systems' ability to predict HE and mortality. Logistic regression and Cox analysis were also performed.

Results: Among 230 first-time TIPS patients, 90-day HE rate was 32.2%. 90-day mortality was 9.6%. None of the evaluated scores independently predicted risk of HE but, MOTS score plus history of HE outperformed all others. All scores predicted mortality well. For 90-day mortality AUCs were 0.717 (MELD-Na), 0.716 (MELD 3.0), 0.667 (FIPS), 0.734 (Child-Pugh), and 0.745 (MOTS). Adjusted Cox model demonstrated that MOTS score has strongest association for 90-day mortality (HR 4.15, 95% CI 2.38–7.25). CKD diagnosis was an independent predictor of 90 day HE (70.6%). Patients listed for liver transplantation had higher 90-day HE rates compared to non-listed patients (39% vs 25%).

Discussion: Pre-procedural hepatic scoring systems demonstrated limited utility for predicting post-TIPS HE but were effective predictors of short-term mortality. Independently, none of the assessments predicted HE well; however, a prior history of HE was associated with a higher risk of HE post-TIPS. Conversely, all models were able to predict short-term mortality well with MOTS exhibiting greatest discriminatory performance. CKD and transplantation status were independent predictors of 90 day HE. Findings suggest current scoring systems may be better suited for mortality risk stratification than prediction of post-TIPS HE.

11) BACLOFEN TOXICITY FOLLOWED BY WITHDRAWAL IN ACUTE KIDNEY INJURY: A DIAGNOSTIC CHALLENGE

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Clinical Vignette

Background: Baclofen is a γ-aminobutyric acid (GABA)-B receptor agonist widely used for the management of spasticity. Approximately 80% of the drug is renally excreted unchanged, patients with acute kidney injury (AKI) are at increased risk for baclofen accumulation and toxicity. Conversely, abrupt discontinuation may precipitate a potentially life-threatening withdrawal syndrome characterized by delirium, autonomic instability, and hyperthermia. Differentiating baclofen toxicity from withdrawal can be challenging, particularly in hospitalized patients with fluctuating renal function and complex medical history.

Case Presentation: 79-year-old male with Parkinson's disease and cardiovascular comorbidities who was brought to ED with worsening tremors, confusion, and altered mental status. Home medications included baclofen 5 mg three times daily for muscle spasticity which patient has been taking for almost 2 years. Initial laboratory evaluation is significant for AKI with serum creatine 1.4 mg/dl, CrCl 54 ml/min (baseline of approximately 0.9 mg/dL). On admission, following medication reconciliation, baclofen was reduced to 5 mg twice daily as needed given concern for baclofen toxicity secondary to reduced renal clearance. The patient's agitation, tremors, and confusion initially improved, and no further doses were administered.

Within 24 hours, the patient experienced worsening confusion, speech impairment, agitation, hyperthermia, tachycardia, hypertension, and tachypnea, necessitating transfer to the ICU. Differentials included Serotonin syndrome, however neurological evaluation revealed absence of clonus and hyperreflexia, making serotonin syndrome less likely. Review of the medication history identified recent cessation of baclofen, raising concern for baclofen withdrawal syndrome. Baclofen was reinitiated at 2.5 mg three times daily, resulting in marked clinical improvement within 24 hours, including resolution of delirium and stabilization of vital signs. The patient was subsequently discharged on a reduced dose with a gradual taper plan and close renal monitoring.

Discussion: This case demonstrates the diagnostic complexity of baclofen-related neurotoxicity in the setting of acute renal dysfunction. While dose reduction was appropriate for suspected toxicity, abrupt cessation precipitated withdrawal syndrome that mimicked other critical conditions including serotonin syndrome. Recognition of recent baclofen discontinuation and prompt reinstitution of therapy led to rapid reversal of symptoms.

Conclusion: There should be high index of suspicion for both baclofen toxicity and withdrawal in patients with altered mental status and impaired renal function. Careful dose adjustment, avoidance of abrupt discontinuation, and thorough medication reconciliation are essential to prevent morbidity and facilitate timely diagnosis and treatment.

12) THE HOURLY TRAP: OSMOTIC DEMYELINATION SYNDROME DESPITE "SAFE" 24 HOUR SODIUM CORRECTION IN HIGH-RISK PATIENT

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Clinical Vignette

Background: Osmotic Demyelination Syndrome (ODS) is a catastrophic complication of rapid hyponatremia correction. Current guidelines generally recommend a maximum correction rate of 8 mEq/L per 24 hours for high-risk patients. However, the standard 24-hour average often masks "instantaneous volatility"—brief periods of rapid correction that exceed cellular adaptation limits and can trigger demyelination in highly susceptible individuals.

Case Presentation: 37-year-old male with chronic alcohol use disorder (AUD) and decompensated liver disease (Child-Pugh C) who presented with profound hyponatremia (126 mmol/L). While his maximum daily average correction rate was 7.17 mmol/L/24h, detailed analysis of instantaneous rates revealed a peak correction velocity of 7.24 mEq/L/24h (0.30 mEq/L/hr). Both metrics exceeded the proposed stricter safety buffer of 6 mEq/L/24h, but the instantaneous rates showed significant mismatches with daily averages throughout the clinical course. For instance:

* Day 2: A daily average of +7.17 masked a peak instantaneous spike of +7.24 mmol/L/24h.

* Day 15: A daily average of +1.50 concealed an instantaneous velocity of +2.26 mmol/L/24h.

* Day 24: A daily average of +1.09 masked a spike of +2.53 mmol/L/24h.

The patient developed ODS, initially manifesting as bulbar dysfunction on Day 19. This neurological decline was clinically overshadowed by concurrent respiratory failure, pneumothorax, and sedation. Diagnosis was confirmed via CT imaging on Day 28 after a "sedation vacation" revealed quadriparesis.

Conclusion: In patients with compounding risk factors (liver disease, malnutrition), adhering to a 24-hour average is insufficient. We advocate for a stricter correction target of <6 mEq/L/24h and a shift toward monitoring instantaneous hourly velocity via q2h/q4h checks. Correction should be halted or slowed if the instantaneous rate exceeds 0.25 mEq/L/hr to prevent the "hourly trap" that standard protocols miss.

13) THE WATERSHED PARADOX: DOES TISSUE CHRONOLOGY TRUMP PERFUSION VOLUMETRICS?

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Clinical Vignette

Background: Advanced tissue selection for unknown-onset acute ischemic stroke (AIS) relies on two competing philosophies: the physiological flow paradigm (EXTEND trial), which is heavily biased toward large vessel occlusions (LVOs), and the chronological tissue paradigm (WAKE-UP trial), which targets low-severity, non-LVO profiles. When these modalities conflict within a border-zone territory, direct prospective data evaluating which paradigm superiorly dictates clinical salvageability remains completely absent. This case presents a unique clinical "natural experiment" testing two distinct hypotheses: first, whether structural tissue chronology can override a completely flatline perfusion readout, and second, whether a hyperacute biological tissue signature provides the necessary physiological margin to safely tolerate mandatory, guideline-driven blood pressure lowering without collapsing critical collateral flow.

Case Presentation: A 44-year-old male presented on May 26, 2026, with a disabling wake-up stroke (baseline NIHSS score of 5) and malignant hypertension at 240/130 mmHg. Head CTA confirmed the absence of a proximal LVO, while automated CTP mapping was entirely silent (Tmax>6 seconds). A structural tissue-clock protocol was deployed to resolve the imaging conflict, revealing an acute left MCA-ACA watershed infarction with a clear diffusion-weighted imaging (DWI) and fluid-attenuated inversion recovery (FLAIR) mismatch. This hyperacute biological signature (< 4.5 hours old) successfully validated tissue viability, providing the physiological margin to safely execute aggressive hyperacute blood pressure titration. The patient safely navigated a pre-thrombolytic systolic blood pressure floor averaging 150 mmHg and an average mean arterial pressure (MAP) of 100 mmHg. Intravenous tenecteplase (0.25 mg/kg) was administered 2.5 hours after symptom recognition, driving significant clinical motor recovery by Day 2 without hemorrhagic transformation.

Conclusion: In un-occluded, perfusion-silent watershed syndromes, cellular tissue chronology superiorly trumps automated perfusion volumetrics. This natural experiment successfully validates that a hyperacute structural tissue signature prevents the inappropriate withholding of reperfusion therapies while safely permitting aggressive blood pressure titration. Transitioning to emerging bedside technologies, such as portable ultra-low-field MRI, represents an actionable, cost-effective workflow solution to systematically test and scale this dual-hypothesis framework.

14) CYSTIC NEUTROPHILIC GRANULOMATOUS MASTITIS PRESENTING WITH ERYTHEMA NODOSUM AND ARTHRITIS: RECOGNIZING GRANULOMATOUS MASTITIS

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Clinical Vignette

A 37-year-old parous woman with a history of obesity, prediabetes, and previously adequately treated latent tuberculosis presented with acute onset left breast pain, erythema, nodularity, and green-yellow nipple discharge. She had not breastfed for two years prior to symptom onset. Initial outpatient treatment included multiple empiric antibiotic regimens for infectious mastitis without clinical improvement. Her course was complicated by fevers, chills, and night sweats.

Given progression of symptoms, she was then hospitalized for further evaluation. Breast ultrasound demonstrated a complex fluid collection concerning for abscess. Biopsy of the left breast revealed abscess formation without definitive granulomatous mastitis (GM). Gram stain, fungal stains, and acid-fast bacilli staining were negative, and cultures showed no growth. However, 16S rRNA sequencing identified Corynebacterium kroppenstedtii. Broad-spectrum intravenous antibiotics were administered during hospitalization, followed by additional outpatient antimicrobial therapy.

After hospitalization, the patient developed nodular lesions on the extremities and polyarticular inflammatory arthralgias of the elbows and knees. Biopsy of nodular lesions showed mixed lobular and septal panniculitis consistent with erythema nodosum. Extensive autoimmune and infectious evaluation including ANA, ENA, ANCA, MPO, PR3, complements, ACE, HIV, syphilis, and fecal calprotectin was negative/normal. Follow-up ultrasounds demonstrated recurrent complex fluid collections.

Her symptoms improved following initiation of systemic corticosteroids. Erythema nodosum and inflammatory arthritis resolved. Recurrent breast lesions despite antibiotics, negative cultures, and response to steroids supported an immune mediated rather than primary infectious process.

Overall, despite nonspecific histopathology, the patient's presentation is most consistent with cystic neutrophilic granulomatous mastitis (CNGM) with overlap of granulomatous mastitis, erythema nodosum and arthritis (GMENA) syndrome. CNGM is characterized histologically by lobulocentric granulomatous inflammation with cystic spaces lined by neutrophils and is frequently associated with Corynebacterium. GMENA represents a systemic inflammatory syndrome with granulomatous mastitis accompanied by erythema nodosum and inflammatory arthritis. Although formal diagnostic criteria have not been universally established, diagnosis is generally based on compatible clinical features, characteristic histopathology when present, detection of Corynebacterium, and exclusion of infectious and autoimmune mimics.

15) SEX-BASED DIFFERENCES IN IN-HOSPITAL COMPLICATIONS AND 90-DAY READMISSIONS AFTER TRANSCATHETER MITRAL VALVE-IN-VALVE REPLACEMENT: A NATIONWIDE RETROSPECTIVE COHORT STUDY

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Research (Basic or Clinical)

Introduction: As more patients with a failing bioprosthetic mitral valve are now too old or frail for reoperative surgery, transcatheter mitral valve-in-valve (TMVR ViV) replacement has emerged as a less invasive alternative. Whether outcomes after this procedure differ between men and women, however, remains poorly understood. We used a national database to test various influencing factors undergoing non-elective TMVR ViV replacement have similar rates of in-hospital mortality, complications, and 90-day readmission.

Methods: We identified non-elective index hospitalizations for TMVR ViV replacement in patients ≥18 years in the Nationwide Readmissions Database (2016–2022) using ICD-10-PCS codes previously reported in the literature. We excluded elective admissions, COVID-19–positive encounters, and records with missing age, sex, mortality, or transfer status. In-hospital mortality, 90-day all-cause readmission, and secondary complications were compared between sexes using survey-weighted multivariable logistic regression and Cox proportional hazards models, adjusting for age, comorbidity burden, and hospital characteristics.

Results: Of 1,276 patients, 773 (60.6%) were women, representing the majority of this non-elective cohort. Comorbidity burden was similar between sexes, though patterns differed: women had higher rates of obesity (22.8% vs 10.4%, p<0.001) and chronic obstructive pulmonary disease (30.6% vs 22.7%, p=0.023), while men had higher rates of smoking (39.0% vs 31.1%, p=0.049), prior coronary artery bypass grafting (33.1% vs 14.9%, p<0.001), chronic kidney disease (54.1% vs 42.0%, p=0.006), and a trend toward more prior myocardial infarction (15.0% vs 9.3%, p=0.0497). At index admission, there were no significant sex differences in stroke, acute kidney injury, bleeding, transfusion, acute heart failure, cardiac tamponade, or cardiogenic shock, and in-hospital mortality was 7.3% overall and similar between sexes (8.1% women vs 6.1% men, p=0.398; adjusted OR 1.75, 95% CI 0.84–3.65, p=0.138). Women were more likely than men to be discharged somewhere other than home after index admission (adjusted OR 1.60, 95% CI 1.01–2.54, p=0.046), while length of stay and hospital charges during index admission were similar between sexes (Figure 1). Within 90 days of discharge, readmission occurred in 30.7% of patients, with similar rates between women and men (31.1% vs 30.0%, p=0.780; adjusted HR 1.03, 95% CI 0.74–1.43, p=0.863). Among readmissions, acute heart failure trended higher in women (54.1% vs 40.8%, p=0.098), while length of stay and hospital charges during readmission were similar between sexes.

Conclusions: In this nationwide cohort, women made up the majority of non-elective TMVR ViV hospitalizations. Despite differing comorbidity profiles, female sex was not independently associated with in-hospital mortality, individual index complications, or 90-day readmission—both of which were similarly high between sexes, with readmission affecting nearly one-third of patients overall. Women were, however, independently more likely to be discharged to a facility rather than home, suggesting greater post-procedural care needs that are not reflected in these hard clinical outcomes. This may reflect differences in frailty, functional status, or social support not captured in claims data, and merits further study. Limitations include the retrospective, administrative nature of the database, lack of procedural and echocardiographic detail, and the possibility of residual confounding

16) DOUBLE TROUBLE: TEMPORAL OVERLAP OF ANTI-GBM DISEASE AND PAUCI-IMMUNE GLOMERULONEPHRITIS

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Clinical Vignette

Introduction: Anti-glomerular basement membrane disease(anti-GBM) and anti-neutrophilic cytoplasmic antibody (ANCA) vasculitis are both small vessel vasculitis and both can cause rapidly progressive glomerulonephritis (RPGN) and diffuse alveolar hemorrhage (DAH). Overlap between these entities is extremely rare. We hereby present three cases diagnosed with overlap of anti-GBM disease and pauci-immune crescentic glomerulonephritis(GN) at our institution. These patients presented within a few weeks of occurrence.

Case Presentation: Case 1 is a 74-year-old-male with hypertension, hyperlipidemia, obstructive sleep apnea, and atrial fibrillation presenting with cough and metallic taste in his mouth. His laboratory results revealed acute kidney injury, microscopic hematuria, and proteinuria. Case 2 is a 71-year-old male with hypertension, obstructive sleep apnea, malignant melanoma, and recently diagnosed ANCA vasculitis who presented with cough, hemoptysis, and shortness of breath. His laboratory workup also revealed acute kidney injury, microscopic hematuria, and proteinuria. Case 3 is a 61-year-old male with hypertension, hyperlipidemia, type 2 diabetes, and obstructive sleep apnea who presented with severe hypoxia and acute kidney injury. He was diagnosed with pauci-immune GN at an outside hospital, then presented to our ER due to persistent cough and hemoptysis. Anti-GBM was tested and returned positive. Interval kidney biopsy EM result confirmed linear IgG deposits in the basement membrane. All three had a kidney biopsy which showed crescentic pauci-immune GN with anti-GBM disease overlap. Therapeutic plasma exchange was initiated, and immunosuppression was induced with IV methylprednisolone and Cyclophosphamide. Case 1 and Case 3 remain hemodialysis dependent to date. Case 2 had enough renal recovery to come off hemodialysis.

Discussion: Given the rarity of the overlapping diseases and paucity of literature, a standard diagnostic and treatment strategy is not established in 'double positive' cases of anti-GBM overlap with ANCA. There are no randomized control trials for double-positive cases, and no standard regimen has been established yet. In current clinical practice, patients are typically treated with an acute regimen similar to that used for anti-GBM disease, followed by maintenance therapy for ANCA-associated vasculitis. The choice of treatment regimen depends mainly on severity of presentation, presence of diffuse alveolar hemorrhage, histopathology findings on kidney biopsy, and consideration of patient's comorbidities, age, and preference, as well as local availability and cost. Longer and closer follow-up is required for double-positive disease due to the possibility of frequent relapses. In conclusion, double positivity for anti-GBM and ANCA antibodies presents a complex clinical challenge, with worse renal outcomes and a need for aggressive and tailored treatment. Further research is necessary to define optimal treatment protocols and improve patient prognosis.

17) AN UNUSUAL CAUSE OF DEEP-SKIN AND MUCOSAL SWELLING: CONSIDER ROSUVASTATIN DOSE INCREASE FOR OROFACIAL ANGIOEDEMA

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Clinical Vignette

Background: Statin-associated angioedema (swelling of the face, lips, or tongue) is a rare adverse side effect reported in a few case reports. Statins may increase bradykinin sensitivity or receptors, which can lead to angioedema, mirroring reactions seen with ACE inhibitors.

Case presentation: A 67-year-old woman with a history of statin intolerance, coronary artery calcification on CT (left anterior descending artery), type 2 diabetes mellitus, and mixed hyperlipidemia (recent untreated LDL-c of 193 mg/dL and fasting triglycerides 471 mg/dL) presented with facial, tongue, and lip swelling a few days after increasing her rosuvastatin dose from 10 to 20 mg. She had no associated respiratory symptoms. Benadryl provided minimal relief. She reports previously tolerating statins for a long period of time. She has an allergy history to lisinopril (dry cough) and now takes Olmesartan. The swelling improved about 10 days after discontinuation of the medication without recurrence. She denied a history of random episodes of swelling or hives. No other environmental exposures or triggers were identified. The patient was referred to an allergy specialist, who ordered laboratory testing to evaluate the complement system for underlying hereditary or acquired angioedema. Since no formal allergy testing for statin reactions exist, the allergy specialist offered open statin re-challenges in clinic if re-trial of rosuvastatin or alternative statin therapies was needed. The patient followed up with Cardiology, who added bempedoic acid (180 mg daily) to ezetimibe 10 mg daily, with a plan to recheck ApoB and lipid panel in 3 months. Injectable PCSK9 inhibitors and icosapent ethyl were also discussed. Re-trial of statin therapy at a lower dose and frequency was also considered.

Discussion: This case highlights an isolated episode of angioedema temporally associated with an increased dose of rosuvastatin that the patient had been taking safely at a lower dose for over a year. Rosuvastatin is rarely associated with causing angioedema, with only a few documented case reports identifying it as a likely cause. Case reports describe recurrent episodes of facial, lip, and tongue swelling. These episodes can occur without a rash or known allergies. The primary management for this type of drug-induced reaction is immediate discontinuation of the medication. Symptoms typically resolve upon discontinuation of the medication, suggesting a rare but probable side effect. Clinicians should consider this reaction in patients with persistent, unexplained facial edema while on statin therapy. Allergy referral may be appropriate to evaluate for hereditary or acquired angioedema and to guide potential statin rechallenge when continued lipid-lowering therapy with statins is indicated.

18) ALTERNATIVE ETIOLOGIES OF HIGH-AMYLASE ASCITES WHEN PANCREATIC EVALUATION IS UNREVEALING — DON'T FORGET THE BOWEL

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Clinical Vignette

Introduction: Markedly elevated amylase in ascitic fluid is a hallmark of pancreatic ascites and warrants pancreatic evaluation. While pancreatic duct disruption is the most common cause of high amylase ascites, alternative etiologies should be considered when pancreatic evaluation is unremarkable. We present a case of amylase-rich ascites caused by a duodenal perforation to highlight an important nonpancreatic source of amylase-rich ascites.

Case Description: A 57-year-old woman with a history of Roux-en-Y gastric bypass and cholecystectomy presented to an outside hospital with nausea and abdominal pain. Laboratory analysis was remarkable for leukocytosis and elevated serum lipase, amylase, and alkaline phosphatase. Acute pancreatitis of suspected biliary origin was diagnosed. The patient transferred to our tertiary center for laparoscopy-assisted ERCP. CT revealed ascites, prompting diagnostic paracentesis which showed spontaneous bacterial peritonitis with a serum-ascites albumin gradient of 1.4 and fluid amylase of 2,684. Fluid cultures and cytology were negative. CT and MRCP showed no evidence of pancreatitis or pancreas duct disruption. However, CT was concerning for a potential pelvic/cecal lesion with peritoneal carcinomatosis. Diagnostic laparoscopy revealed hemorrhagic ascites, peritoneal nodules, and a possible cecal mass. ERCP was deferred. Peritoneal biopsies showed benign fibroadipose tissue.

Subsequent colonoscopy to evaluate for cecal malignancy was unremarkable. Shortly after, she had increased abdominal pain. CT showed pneumoperitoneum. Emergent exploratory laparotomy identified a 1 cm perforated duodenal ulceration adjacent to the bypassed stomach. The perforation was repaired with complete symptom resolution and no recurrence of ascites.

Discussion: This presentation of abdominal pain, elevated serum lipase and liver function tests, and amylase-rich ascites was strongly suggestive of pancreatic ascites secondary to acute pancreatitis, but instead represented a perforated duodenal ulcer. Abdominal visceral perforation can lead to intraperitoneal leakage of bile and pancreatic enzymes, which are then absorbed and result in elevated serum levels. Other nonpancreatic causes of high amylase ascites include mesenteric ischemia, small bowel obstruction, malignancy, and cholecystitis. As this case demonstrates, occult gastrointestinal perforation can present as amylase-rich ascites with elevated serum lipase and amylase, and should be considered when pancreatic imaging is unremarkable.

19) AN ELUSIVE CASE OF PRIMARY CUTANEOUS GAMMA-DELTA T-CELL LYMPHOMA WITH CONCURRENT HLH

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Clinical Vignette

Case: A 33-year-old female presented with an extensive rash, bilateral leg swelling, night sweats and fatigue. She endorsed a 2-year history of relapsing and remitting skin nodules with ulceration. One month prior to hospitalization, she had a CT abdomen/pelvis which revealed hepatomegaly, anasarca, and mild splenomegaly. She underwent skin biopsy but did not receive her results. Bone marrow biopsy revealed normal cell lineages. She presented to hepatology clinic due to hepatomegaly and was recommended for direct inpatient admission given imaging, lab and vital sign abnormalities.

On presentation, she was febrile to 38.3 C, hypotensive to 92/50, tachycardic to 109, with normal oxygen saturation. Exam was notable for palpable anterior cervical lymph nodes, a left axillary lymph node, facial edema, and a rash involving the extremities, torso and face composed of scattered pink nodules with erosions. Labs were notable for leukopenia (1.6 K/uL), anemia (10.7 g/dl), thrombocytopenia (83 K/ul), low haptoglobin (<8 mg/dl), elevated ferritin (8022 ng/ml), LDH (1856 U/L), and triglycerides (304 mg/dl). LFTs were markedly elevated including AST (526 U/L), ALT (253 U/L), and bilirubin (3.5 mg/dl). Soluble IL-2 receptor was also very elevated (8895 pg/ml). CT chest showed mildly enlarged bilateral axillary lymph nodes and diffuse body wall edema. CT abdomen/pelvis revealed diffuse nodular skin thickening and subcutaneous inflammation, raising suspicion for cutaneous lymphoma, along with splenomegaly, and inguinal, iliac, and retroperitoneal lymphadenopathy.

The differential was initially broad, including hematologic malignancy, autoimmune disease, and infection. Subspecialty consultation was obtained from dermatology, rheumatology, infectious disease, hematology, and hepatology. Infectious studies were broadly negative. She underwent skin biopsy with pathology revealing atypical infiltrate of large to medium T lymphocytes and was diagnosed with primary cutaneous gamma-delta T-cell lymphoma (PCGDTL). Her fever, cytopenias, splenomegaly, hepatitis, and elevated ferritin and IL2R led to a diagnosis of hemophagocytic lymphohistiocytosis (HLH) that was felt to be secondary to lymphoma. She was treated with a dose of tocilizumab and high dose steroids for HLH along with cyclophosphamide, doxorubicin, etoposide, prednisone and vincristine (CHOEP) for PCGDTL. Ruxolitinib was also added later. She was discharged in stable condition. Despite having a significant response to front line therapy, her disease quickly progressed before allogeneic stem cell transplant could occur. Subsequent therapy included pralatrexate, and later brentuximab without significant response. She ultimately suffered a fatal intraparenchymal hemorrhage secondary to thrombocytopenia and coagulopathy from disease progression and associated HLH.

Discussion: PCGDTL is a rare and aggressive subtype of cutaneous lymphoma comprising <1% of cases. Given skin findings which overlap with other infectious or inflammatory conditions, diagnosis is often delayed. Time from symptoms to diagnosis averages 9 months. The 5-year survival rate is generally <20%, and median overall survival ranges from 15 to 31 months. Patients are often susceptible to paraneoplastic phenomena, including HLH (which is a negative prognostic indicator). Treatment is largely informed by case reports and involves anthracycline-based multiagent chemotherapy followed by allogeneic stem cell transplant. Early identification of suspicious skin changes and referral to appropriate subspecialty care is paramount.

20) VALIDATING THE ABC SCORE AS A TOOL FOR IMPROVED LEVEL OF CARE TRIAGING IN THE VETERAN POPULATION

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Quality Improvement / Patient Safety / High-value Care / Physician Well-being & Professional Fulfillment

Introduction: The Age, Blood Tests, and Comorbidities (ABC) score is a validated pre-endoscopic score that accurately predicts mortality in an undifferentiated patient with a gastrointestinal bleed (1). It integrates labs, age, pre-existing conditions, and the American Society of Anesthesiologists (ASA) score to accurately predict 30-day mortality, and is more predictive than other established scores. However, this score has not been validated in the veteran population, especially as this population has a higher comorbidity burden, greater NSAID and antithrombotic use, increased alcohol use, and higher prevalence of liver disease (2-5). This study aims to validate the score in the veteran population in order to implement protocols to better triage patients admitted with GI bleeding.

Methods: Patient data was collected based on ICD-10 codes (K92.0, K92.1, K92.2) at discharge for patients discharged from the Clement J Zablocki VA Medical Center between 1/1/25 to 8/31/25. Chart review of patients included components of the Charlson Comorbidity Index and the ABC score, as well as home medications and alcohol use. Patients who did not have albumin labs checked during the admission were excluded from the data as an ABC score was unable to be calculated. From this, Pearson and Mann-Whitney U statistical analyses were performed to compare the ABC score to outcome measures of length of stay (LOS), 30-day mortality, 6-month mortality, and whether a GI intervention occurred or not.

Results: The ABC score distribution in this veteran population ranged 2 to 13 with a mean/median of 7. There was no significant association ($p= 0.541$, $p> 0.05$) between the ABC score and LOS or between the ABC score and 30-day ($p= 0.628$) and 6-month ($p= 0.420$) mortality. There was a significant association between the ABC score and GI intervention during admission ($p = 0.023$). Other variables included whether the patient had a home medication of NSAIDs, aspirin (ASA), antiplatelet, or anticoagulation therapy (not significant, $p= 0.060$) and whether patient had alcohol use disorder (AUD) on their problem list during admission (significant, $p= 0.005$). AUD patients scored 2 points lower on ABC scores, were younger (median 66 years with AUD vs median 76 years without AUD, $p= 0.0003$), and with fewer comorbidities (median 6 without AUD, median 4 with AUD, $p= 0.016$).

Discussion: This analysis validates the ABC score as a useful tool in veterans to determine endoscopic intervention, but may have limited utility in LOS, 30-day mortality, and 6-month mortality. Home use of NSAIDs and anticoagulation/antithrombotic therapy did not statistically correlate with the ABC score in this population, but alcohol use disorder correlated with lower ABC scores. This highlights the role of comorbidities and age in the ABC score, and how the lack of proper documentation of medical history in veterans could contribute to incorrect risk stratification. Since the ABC score is significant in utility with endoscopic intervention in the veteran population, the next step would be to implement use on inpatient medicine teams to identify high risk patients that may require higher level of care or more immediate intervention.

References

(1-5) separate from abstract.

21) COUNTY-LEVEL CORRELATES OF ALCOHOL-RELATED HOSPITALIZATIONS AND DRUG OVERDOSE MORTALITY IN WISCONSIN

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Research (Basic or Clinical)

Background: Excessive alcohol use and drug overdose are major public health challenges in the United States. Although unhealthy alcohol use is strongly associated with drug overdose at the individual level, it remains unclear whether alcohol-related hospitalizations and drug overdose mortality share common county-level structural correlates. We examined whether alcohol-related hospitalizations and drug overdose mortality share common county-level structural correlates in Wisconsin.

Methods: We conducted a cross-sectional ecological study of all 72 Wisconsin counties using publicly available data. Alcohol-related hospitalization rates (per 100,000) and alcohol outlet density (licenses per 500 population) were obtained from the Wisconsin Department of Health Services Environmental Public Health Tracking System (2020). Drug overdose mortality rates (per 100,000) were obtained from CDC WONDER (2018-2020 pooled). County-level covariates included poverty rate, uninsured rate (American Community Survey 2020), and rurality (USDA Rural-Urban Continuum Codes). Pearson correlation assessed the relationship between alcohol-related hospitalization and drug overdose mortality. Separate multivariable linear regression analyses were performed for each outcome.

Results: Alcohol-related hospitalization and drug overdose mortality demonstrated a moderate positive county-level correlation ($r=0.38$). Poverty rate was independently associated with both alcohol-related hospitalization ($\beta=43.7$, 95% CI 25.5-61.9; $p<0.001$) and drug overdose mortality ($\beta=6.7$, 95% CI 1.7-11.6; $p=0.009$), suggesting a shared socioeconomic pattern across counties. In contrast, alcohol outlet density was not associated with alcohol-related hospitalization after adjustment ($\beta=29.1$; $p=0.30$), but was positively associated with drug overdose mortality ($\beta=15.9$; $p=0.039$). Greater rurality was also independently associated with higher drug overdose mortality ($\beta=7.9$; $p=0.036$) but not with alcohol-related hospitalization.

Conclusions: Wisconsin counties with higher poverty rates had higher rates of both alcohol-related hospitalizations and drug overdose mortality. In contrast, alcohol outlet density and rurality were associated only with drug overdose mortality. These findings suggest that addressing socioeconomic disadvantage may reduce the burden of both conditions.

22) LEADLESS PACEMAKER FOR SLOW ATRIAL FIBRILLATION IN THE SETTING OF AMYLOIDOSIS WITH ACTIVE MALIGNANCY

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Clinical Vignette

Background: Bradyarrhythmia in cardiac amyloidosis can precipitate shock from rate-dependent reduced cardiac output. Transvenous pacing provides support but carries bleeding, infection, and mobility risks, especially with concurrent gastrointestinal malignancy. Device choice in this case requires balancing physiologic benefit against procedural safety and long-term value.

Case: A 69-year-old man with invasive rectosigmoid adenocarcinoma, active bleeding secondary malignancy, profound cachexia, atrial fibrillation (AF) with tachy-brady syndrome, and presumed AL amyloidosis presented with bradycardia-mediated shock with MAPs in the mid-60s requiring norepinephrine. TTE showed diffuse LV thickening with diastolic dysfunction concerning for amyloidosis. With cancer staging and amyloidosis workup pending, a leadless AV Micra pacemaker was implanted, stabilizing hemodynamics and permitting vasopressor discontinuation. Bone marrow biopsy eventually confirmed AL amyloidosis. Later in his hospitalization, the patient elected to pursue comfort-focused care.

Decision-Making: Traditional transvenous pacemaker placement has been reported for amyloidosis-related shock, but comorbidities can make transvenous systems prohibitive. In this case, life-limiting malignancy, active bleeding, profound cachexia and urgent need for ventricular rate support favored a leadless system. Although we recognized AV synchrony in this case would be limited in AF, we believed that adequate hemodynamic stabilization, more importantly, could be achieved with lower procedural risk. Despite pacing, MAPs initially remained borderline for required procedures, prolonging his hospitalization. This underscores the need for further study of pacing strategies in amyloidosis when comorbidities preclude transvenous devices.

Conclusion: Here, we report a case where a patient with active colorectal cancer developed bradycardia-mediated shock due to newly diagnosed AL amyloidosis. Even with his higher risk of complications, such as bleeding and infection, leadless pacing served as a safer and adequate method of hemodynamic rescue than traditional transvenous systems.

23) THE COST OF DUAL IMMUNOSUPPRESSION: DISSEMINATED HISTOPLASMOSIS IN A PATIENT WITH ULCERATIVE COLITIS

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Research (Basic or Clinical)

Anti-tumor necrosis factor (anti-TNF) therapy is a recognized risk factor for endemic fungal infection; however, the added risk of pairing it with a thiopurine is often underestimated. A nearly 2-fold increased risk of opportunistic infections was reported in the French nationwide cohort study comparing combination therapy versus anti-TNF monotherapy. We report a case of disseminated histoplasmosis in a patient on dual immunosuppressant therapy with adalimumab and azathioprine.

A 59-year-old male with a history of IgA deficiency, cirrhosis, and ulcerative colitis presented with four days of worsening exertional dyspnea with an increased home oxygen requirement. History was pertinent for frequent exposure to bird droppings on his farmland. Initial examination revealed tachycardia and hypoxia with chest imaging demonstrating extensive bilateral ground-glass and nodular consolidative opacities along with mediastinal and hilar lymphadenopathy. Lab work was remarkable for leukopenia, transaminitis, and significantly elevated urine Histoplasma antigen. MRI of the brain ruled out central nervous system involvement. Patient received Induction therapy with amphotericin B and was later transitioned to oral itraconazole for disseminated histoplasmosis causing multi-organ disease. Additionally, both Adalimumab and azathioprine were held, and mesalamine was initiated for ulcerative colitis. The patient improved progressively, and he was weaned off supplemental oxygen.Adalimumab causes TNF-α blockade, disrupting granuloma formation responsible for containing histoplasma. Azathioprine suppresses T-cell-mediated immune response, further increasing the risk for disseminated mycoses. Histoplasma urinary antigen level is an independent predictor of disease severity and can guide treatment. This case also highlights the management challenge after discontinuation of both immunosuppressants, significantly narrowing treatment options for ulcerative colitis and risking a flare-up with temporary agents like mesalamine.

24) WHEN DKA RESOLVES, BUT DOESN'T

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Clinical Vignette

SGLT2 inhibitors have a growing list of indications, including heart failure with reduced and preserved ejection fraction, chronic kidney disease, and type 2 diabetes mellitus. They are highly efficacious but have several known side effects, most commonly genitourinary infections, ketoacidosis, and hypovolemia. For empagliflozin specifically, the half-life is estimated at 12.4 hours, meaning the medication can remain in the body for over 60 hours after the last dose when taken consistently. We present a case of septic shock with hyperglycemic diabetic ketoacidosis (DKA), followed by euglycemic DKA.

Our patient is a 68-year-old male with PMH significant for HFrEF (EF 45% 11/13, on Guideline-directed medical therapy (GDMT)), COPD, OSA (CPAP at night), aflutter (on warfarin), CHB s/p PPM, urinary retention (permanent indwelling catheter), bipolar disorder, and T2DM on insulin, admitted for fever, hypotension, and altered mental status, found to be in septic shock and DKA.

Vital signs on presentation were significant for T 102.4 F, BP 67/42, HR 70 (paced), 88% O2 sat RA. Labs notable for lactate 2.5, K 6.0, bicarb 17, anion gap 15, glucose 316, and beta-hydroxybutyrate (BHB) 4.36, with AKI (creatinine 1.38 from baseline 0.9). CXR showed RUL patchy opacities; CT thorax showed multifocal consolidations (RUL and bilateral lower lobes) and CT A/P showed nonspecific bladder wall thickening. Urinalysis was consistent with infection (interpretation limited by chronic indwelling catheter) with glucose >1000.

His Foley was replaced, and the patient was admitted to the MICU for further management. He was started on oxygen, norepinephrine and vasopressin, stress-dose steroids, vancomycin and piperacillin-tazobactam, and an insulin drip given elevated BHB.

The next morning, he was on minimal pressors with an improving mental status. His anion gap had closed and BHB was negative, so the insulin drip was stopped 2 hours after subcutaneous long-acting insulin was given. The following day, however, morning labs showed a new anion gap of 20 with glucose 184. Lactate was normal, but BHB had risen to 3.57. The insulin drip was restarted, the gap again closed, and he transitioned to long-acting subcutaneous insulin. Over the following days, his septic shock resolved (presumed UTI source), and he was downgraded to the medicine floor. But why did he develop euglycemic DKA after resolution of hyperglycemic DKA?

As part of his GDMT, our patient was taking empagliflozin, an SGLT2 inhibitor. Ketoacidosis occurs at an incidence of 0.5 per 1000 T2DM patient-years and accounts for roughly a third of all DKA cases in SGLT2i users; data on euglycemic DKA incidence specifically remain unclear. This case highlights an important consideration: SGLT2 inhibitors remain in the body for 2.5+ days after the last dose and potentially longer with renal dysfunction, as over 50% of elimination is renal. DKA should remain on the differential for patients with an elevated anion gap regardless of glucose level while on these medications, even days after the last dose.

Euglycemic DKA can follow resolution of hyperglycemic DKA in patients on SGLT2 inhibitors even multiple days after last dose and warrants consideration for patients with evidence of acidosis.

25) A SINISTER DILEMMA: ANTICOAGULATION IN ATRIAL FIBRILLATION WITH COR TRIATRIATUM

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Clinical Vignette

Background: Cor triatriatum is a rare congenital cardiac anomaly in which a thin fibromuscular membrane divides either the left (sinistrum) or the right (dextrum) atrium, effectively creating three atrial chambers. It accounts for approximately 0.1%-0.4% of all congenital heart defects. Although most cases are diagnosed in childhood, adult presentation commonly occurs when the membrane is non-obstructive, often with atrial arrhythmias.

Case summary: A 61-year-old woman with paroxysmal atrial fibrillation (AF) and non-obstructive cor triatriatum sinistrum (CTS) presented a management dilemma regarding the need for long-term anticoagulation for stroke prevention. Initially diagnosed with AF at age 34, echocardiography revealed a non-obstructive CTS without other significant pathology. After cardioversion, she was placed on long-term metoprolol and apixaban. She remained asymptomatic for over a decade before developing recurrent palpitations and fatigue. Repeat workup revealed AF with unchanged echocardiographic findings. Despite a CHA□DS□-VASc score of 1 for female sex, she remained on chronic anticoagulation for over 2 decades. Given the persistently low thromboembolic risk score and the absence of specific data regarding anticoagulation in CTS, apixaban was discontinued after shared decision-making.

Discussion: Prior to 2025, there were no guidelines regarding anticoagulation therapy in patients with AF and non-obstructive CTS with a low CHA_2DS_2-VASc score.

Publication of the 2025 ACC/AHA/HRS/ISACHD/SCAI guidelines prompted reassessment of the need for anticoagulation in this patient, as it awards a Class I, LOE C-LD recommendation for chronic anticoagulation (direct anticoagulant or vitamin K antagonist) in all patients with unrepaired CTS irrespective of conventional thromboembolic risk factors. While the new guidelines represent a paradigm shift in the management of atrial fibrillation in CTS, it does not address the heterogeneity within CTS—specifically, the difference between obstructive and non-obstructive membrane physiology. This raises the question of whether thromboembolic risk is uniform across these subgroups.Additionally, the guidelines do not specify a preferred anticoagulant in this unique population. While they suggest that warfarin may be favored over DOACs given the shared pathophysiology with rheumatic mitral stenosis, this is presented as a consideration and is not supported by CTS-specific data, leaving clinicians to extrapolate from related conditions.

Conclusion: Currently, there are no studies that directly compare thromboembolic risk between obstructive and non-obstructive CTS. Therefore, prospective data are needed to determine whether the risk and the benefit of chronic anticoagulation vary by membrane physiology and atrial function, and to guide optimal anticoagulation strategies in CTS.

26) SURVIVING THE EXTREME : A RARE CASE OF EXTREME HYPERNATREMIA (NA 200 MEQ/L) SECONDARY TO MEDICATION NON-ADHERENCE IN CENTRAL DI

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Clinical Vignette

Central DI is characterized by a deficiency of anti-diuretic hormone leading to hypotonic polyuria and a high risk of dehydration. We present a rare case of a patient with known central DI who miraculously survived a serum sodium (Na) above 200mEq/L following medication non-adherence bringing forth treatment challenges with current available guidelines.

A 64 year old male with remote history of subarachnoid hemorrhage, known central Diabetes Insipidus on DDAVP presented for altered mentation, progressive lethargy and poor oral intake. History revealed multiple prior admissions for recurrent hypernatremia due to non-adherence. Work up revealed Sodium above 200, Creatinine 6. He was started on hypotonic fluids with bicarbonate, and goal was to reduce it to 185 in the next 24 hours. Fluid titration was done and gradually Na was brought down to 150 in 4 days with improvement in mentation, urine output and creatinine. DDAVP 0.1mg twice daily was resumed when Na was down to 153 and was titrated to 0.2mg twice daily. This case was unique given the patient never required any Renal Replacement Therapy (RRT) and was managed by fluids and DDAVP solely without developing neurological injury and surviving the extreme Na.

The extreme degree of hypernatremia was attributed to CDI, in which deficient arginine vasopressin (AVP) secretion leads to massive renal free water losses. Medication non-adherence removed the compensatory effect of exogenous desmopressin, resulting in progressive, unchecked water loss; the chronic nature of this hypernatremia conferred a degree of neuroprotection due to adaptive volume regulation with osmolyte accumulation. This creates a paradox, as these osmoles require several days to fully dissipate, meaning that overly rapid correction of chronic hypernatremia can cause water influx into brain cells, resulting in complications. The big challenge in managing this patient was determining the appropriate rate of sodium correction. Traditional recommendations are limiting correction to no more than 12 mmol/L per day. However, these recommendations are largely extrapolated from pediatric data and lack robust adult evidence, with recent data suggesting that failure to correct hypernatremia within 72 hours is associated with increased mortality. A notable aspect of this case is the decision not to employ RRT which has been advocated for the management of extreme hypernatremia, particularly with concurrent kidney failure, as it allows for controlled sodium reduction especially with Continuous RRT, avoiding rapid shifts. However, the existing literature on RRT for hypernatremia is limited to small retrospective studies and case reports, and the indications remain undefined. This exposes a critical gap in the medical literature: the absence of evidence-based guidelines for the management of severe hypernatremia, optimal rate of sodium correction, particularly in chronic versus acute presentations, indications for RRT, true incidence and risk factors for Osmotic Demyelination Syndrome in the setting of hypernatremia and its correction. Prospective, multicenter studies and consensus guidelines are needed to standardize the approach to this life-threatening electrolyte disorder.

27) ABDOMINAL PAIN UNVEILS ANTIPHOSPHOLIPID SYNDROME: AN UNUSUAL CASE OF EXTENSIVE SPLANCHNIC VENOUS THROMBOSIS

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Clinical Vignette

Introduction: Antiphospholipid antibody syndrome (APS) is an acquired autoimmune thrombophilia characterized by venous or arterial thrombosis and/or pregnancy morbidity in the presence of persistent antiphospholipid antibodies. Although deep vein thrombosis and cerebrovascular events are the most common thrombotic manifestations, splanchnic venous thrombosis is an uncommon presentation and may delay diagnosis. Prompt recognition is essential because extensive thrombosis of the portal, splenic, and superior mesenteric veins can lead to bowel ischemia and significant morbidity. This case highlights an unusual initial presentation of APS in a patient without prior thrombotic or obstetric history.

Case Presentation: A 47-year-old woman presented with acute diffuse abdominal pain without a history of venous thromboembolism, recurrent pregnancy loss, or other known hypercoagulable conditions. Computed tomography of the abdomen and pelvis demonstrated extensive acute thrombosis involving the portal vein, splenic vein, and superior mesenteric vein with associated thrombophlebitis. Given the extent of thrombosis and concern for bowel compromise, she was admitted for close monitoring, bowel rest, and anticoagulation. She was maintained nil per os (NPO), and a peripherally inserted central catheter was placed to initiate total parenteral nutrition. Intravenous unfractionated heparin was started and later transitioned to therapeutic enoxaparin after clinical stabilization. Her abdominal pain gradually improved, bowel function recovered, and she was able to tolerate an oral diet without surgical intervention. She was discharged on therapeutic enoxaparin because of concern for unreliable absorption of direct oral anticoagulants in the setting of acute splanchnic venous thrombosis and recent bowel compromise. Outpatient hematology evaluation included an extensive hypercoagulability workup that demonstrated positive lupus anticoagulant and beta-2 glycoprotein I antibodies, confirming the diagnosis of antiphospholipid antibody syndrome. She was subsequently transitioned to long-term anticoagulation with warfarin.

Discussion: Splanchnic venous thrombosis accounts for a small proportion of venous thromboembolic events and should prompt evaluation for underlying hypercoagulable disorders, particularly when thrombosis is unprovoked or occurs at unusual sites. APS remains an important and potentially underrecognized cause of extensive abdominal venous thrombosis, even in patients without prior thrombotic events or classic obstetric manifestations. Early diagnosis and therapeutic anticoagulation are essential to prevent bowel infarction and other life-threatening complications. Current evidence supports vitamin K antagonists over direct oral anticoagulants for secondary prevention of thrombosis in patients with thrombotic APS because of higher recurrence rates observed with DOAC therapy, particularly in high-risk patients.

Conclusion: Diffuse abdominal pain may represent the initial manifestation of APS through extensive splanchnic venous thrombosis. This case emphasizes the importance of maintaining a broad differential diagnosis for abdominal pain, recognizing unusual thrombotic presentations, and pursuing a comprehensive hypercoagulability evaluation. Early recognition of APS allows for appropriate long-term anticoagulation with warfarin and may reduce the risk of recurrent thrombotic events.

28) WHEN AST IS NOT JUST HEMOLYSIS: RECOGNIZING ACUTE HEPATIC CRISIS IN SICKLE CELL DISEASE

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Clinical Vignette

Background: Hepatic involvement in sickle cell disease spans a spectrum from laboratory abnormalities related to chronic hemolysis to acute syndromes such as acute sickle hepatic crisis. Differentiation can be challenging because hemolysis itself can elevate bilirubin and disproportionately increase aspartate aminotransferase (AST), as red blood cells contain significant AST. This overlap may obscure early hepatic injury and lead to misattribution of abnormal liver enzymes to hemolysis alone. Acute sickle hepatic crisis typically presents with right upper quadrant abdominal pain, hyperbilirubinemia, and evolving transaminase abnormalities, requiring a high index of suspicion for timely recognition.

Case: A 24-year-old woman with known sickle cell disease and prior cholecystectomy presented with right upper quadrant abdominal pain radiating to the back. Initial laboratory evaluation demonstrated hemoglobin 7.9 g/dL, AST 585 U/L, alanine aminotransferase (ALT) 185 U/L, total bilirubin 6.8 mg/dL, and direct bilirubin 1.8 mg/dL, consistent with mixed hyperbilirubinemia with indirect predominance. On the following day, her hemoglobin decreased to 6.8 g/dL, with evolving transaminase abnormalities showing a decline in AST to 486 U/L and a rise in ALT to 392 U/L. Reticulocyte count was elevated at 186.4, consistent with active hemolysis.

Gastroenterology was consulted for persistent right upper quadrant pain. Computed tomography demonstrated mild bladder wall thickening without hepatic pathology. Right upper quadrant ultrasound revealed coarse hepatic echotexture and abnormal echogenicity consistent with chronic hepatic changes related to sickle cell disease; the gallbladder was absent post-cholecystectomy. An extensive evaluation, including autoimmune panel (antinuclear antibody, anti-smooth muscle antibody, antimitochondrial antibody), ceruloplasmin, alpha-1 antitrypsin, and viral hepatitis panel, was negative.

Given the combination of localized abdominal pain, hyperbilirubinemia, AST-predominant transaminitis with subsequent ALT rise, and laboratory evidence of hemolysis, the presentation was determined to be most consistent with acute sickle hepatic crisis. Hematology consultation supported this diagnosis. The patient was managed conservatively with supportive care, consistent with a mild presentation.

Discussion: This case demonstrates a characteristic yet potentially underrecognized presentation of acute sickle hepatic crisis. The initial AST predominance can be misleading, as AST is released from lysed red blood cells during hemolysis. However, the subsequent rise in ALT reflects evolving hepatocellular injury, distinguishing hepatic crisis from isolated hemolysis. The presence of right upper quadrant pain further supports hepatic involvement.

The differential diagnosis includes hepatic sequestration and intrahepatic cholestasis, but the degree of transaminase elevation and absence of severe hyperbilirubinemia make these less likely. Negative autoimmune and viral workup further supports a sickle-related etiology. Recognition of this evolving laboratory pattern is critical, as more severe cases may require escalation of care, including exchange transfusion.

Conclusion: In patients with sickle cell disease, elevated AST in the setting of hemolysis should not be attributed solely to hemolysis, particularly when accompanied by right upper quadrant pain and dynamic changes in transaminases. Early recognition of acute sickle hepatic crisis is essential, as disease severity varies and may require escalation of care in more severe presentations.

29) RAPIDLY PROGRESSIVE INTERSTITIAL LUNG DISEASE REVEALING LUNG-DOMINANT ANTI-EJ ANTISYNTHETASE SYNDROME

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Clinical Vignette

Background: Antisynthetase syndrome (ASyS) is a rare autoimmune disease classically characterized by interstitial lung disease (ILD), inflammatory myopathy, arthritis, Raynaud phenomenon, and mechanic's hands. ILD may be the initial or sole manifestation, particularly in patients with anti-EJ antibodies, making diagnosis challenging. We report a case of lung-dominant anti-EJ ASyS presenting as rapidly progressive ILD, highlighting the importance of extended myositis antibody testing when infectious evaluation is unrevealing.

Case: A 56-year-old woman with gastroesophageal reflux disease and osteoarthritis presented with a three-month history of progressive dry cough, exertional dyspnea, and worsening hypoxemia following travel to the southern United States. She was initially treated for presumed atypical community-acquired pneumonia with doxycycline and albuterol after chest radiography, but before outpatient CT could be completed, she developed acute hypoxemic respiratory failure requiring hospitalization. Chest CT demonstrated bilateral patchy ground-glass opacities. Despite broad-spectrum antibiotics, extensive bacterial, fungal, and serologic testing was unrevealing. She was discharged on supplemental oxygen but was readmitted two weeks later with worsening hypoxemic respiratory failure.Repeat chest CT demonstrated rapidly progressive bilateral lower lobe consolidative opacities with worsening multifocal ground-glass infiltrates. Bronchoscopy with bronchoalveolar lavage showed airway erythema and increased secretions, but microbiologic studies remained negative. Pulmonary function testing demonstrated a restrictive ventilatory defect with reduced diffusing capacity. Autoimmune evaluation revealed positive ANA (1:80, speckled), anti-SSA, and anti-Ro52 antibodies. An extended myositis antibody panel identified anti-EJ antibodies, establishing the diagnosis of antisynthetase syndrome; concomitant Sjögren syndrome was also identified. Creatine kinase and aldolase were normal, without evidence of inflammatory myopathy. She was treated with intravenous corticosteroids followed by prednisone and mycophenolate mofetil, resulting in rapid clinical improvement. At one-month follow-up, she no longer required supplemental oxygen, pulmonary function testing demonstrated improved lung volumes and diffusing capacity, and repeat high-resolution CT showed marked resolution of bilateral ground-glass and consolidative opacities.

Discussion: This case highlights the importance of considering autoimmune ILD in patients with rapidly progressive hypoxemic respiratory failure after infectious etiologies have been excluded. Early recognition through extended myositis antibody testing enabled prompt immunosuppressive therapy, resulting in rapid clinical and radiographic improvement. Although ASyS is classically associated with inflammatory myopathy and other rheumatologic manifestations, this case demonstrates that severe lung-dominant disease may occur in their absence. Anti-EJ antibodies are among the less common antisynthetase antibodies and are frequently associated with a predominantly pulmonary phenotype, contributing to diagnostic delay when myositis is absent. The concomitant diagnosis of Sjögren syndrome further illustrates the complexity of overlapping autoimmune diseases and emphasizes that identification of one autoimmune condition should not preclude evaluation for another when the clinical presentation is atypical. In addition, anti-Ro52 positivity has been associated with more severe ASyS-related ILD and poorer pulmonary outcomes, further emphasizing the importance of early recognition and timely immunosuppressive therapy. Clinicians should maintain a high index of suspicion for ASyS and consider extended myositis antibody testing in patients with isolated, rapidly progressive ILD despite a negative infectious evaluation, even when another autoimmune disease is identified.

30) A RARE CASE OF LARGE RETROPERITONEAL SCHWANNOMA IN A YOUNG ADULT

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Clinical Vignette

Schwannomas are benign tumors that arise from peripheral nerve sheaths and typically grow in the head, neck or flexural surfaces of extremities. Retroperitoneal location is rare, representing 0.5-5% of the cases. Additionally, these tumors occur in adults in 3rd, 4th and 5th decade. They're distinctly uncommon in young adults and presentation with vague abdominal symptoms as seen in this patient can pose a diagnostic challenge.

19-year-old male presented with worsening, intermittent bilateral lower abdominal pain associated with night sweats, chills, and an unintentional 80-pound weight loss. He also reported worsening constipation and progressive difficulty urinating. His lab work was remarkable for an elevated CRP 16.05 mg/L; and abdominal imaging showed a large, heterogeneous midline pelvic mass (10.6 x 10.1 x 10.6 cm) with concern for central necrosis or cystic degeneration. Moderate right-sided hydroureter and severe hydronephrosis was noted due to compression of the distal right ureter and the compression on the sigmoid colon explained the extensive proximal stool burden noted on imaging. Compression of the right internal iliac artery and veins was also seen without any signs of peripheral vascular insufficiency. A staging PET scan revealed moderately intense metabolic activity, consistent with its hypercellular capsule and central avascular necrosis, without any evidence of metastasis. Comprehensive testing for germ cell tumors (AFP, B-HCG and LDH), and for gastrointestinal tumors (CEA, and CA 19-9) was negative. A USG-guided fine-needle aspiration (FNA) and core needle biopsy of the pelvic mass revealed spindle cell proliferation with extensive necrosis. The patient underwent bilateral ureteral stent placement to protect the urinary tract during surgery, followed by surgical resection of the pelvic mass. Final surgical pathology confirmed the benign retroperitoneal schwannoma with extensive degenerative cystic necrosis.

The large retroperitoneal space allows these tumors to grow uncontrolled until symptoms occur mainly because of mass effects. Malignant schwannomas have been reported in literature albeit much less common. This case highlights the diagnostic pathway for thorough evaluation. Core needle biopsy is preferred over USG guided FNA due to its increased sensitivity for pathologic evaluation. Surgical excision is gold standard to provide symptom relief and protect surrounding viscera from ongoing compression. The low 5-year recurrence rate of 6.7% further supports timely surgical excision.

31) A RARE CASE OF RHABDOMYOLYSIS EXACERBATED BY STATIN THERAPY IN ACUTE ANAPLASMOSIS

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Clinical Vignette

Statins, particularly at high doses, are one of the most common drug-related causes of rhabdomyolysis. Risk factors including hypothyroidism, renal impairment, and systemic infections like Anaplasmosis increase susceptibility to statin induced myopathy. Here, we describe a patient on high-dose atorvastatin who developed severe rhabdomyolysis and multi-organ dysfunction in the setting of acute anaplasmosis.

68-year-old female with history of breast cancer, coronary artery disease, and dyslipidemia on atorvastatin 80mg. She presented with 1-week history of nausea, persistent diarrhea, and markedly reduced oral intake. She reported experiencing profound weakness two days prior causing her to fall off the toilet seat and lay on the floor for 2 hours before family helped her move, but she did not get evaluated at the time. Two days later she presented for a previously scheduled oncology appointment where lab work revealed leukopenia (3.68 x10^3/uL), severe thrombocytopenia (11 x10^3/uL), severe hyponatremia (113mEq/L), significantly elevated AST (575 Unit/L) and ALT (157 Unit/L). She also had elevated creatinine (7.10mg/dL), Procalcitonin (71ng/mL) and Creatine Kinase (13,000 Unit/L). Normal saline boluses were given for fluid resuscitation prior to admission to the Medical ICU. Later it was discovered that she currently lives on 10 acres of wooded land and had recently noted a tick bite. Her peripheral smear demonstrated morulae in neutrophils and Anaplasma Phagocytophilum was confirmed on PCR. Rhabdomyolysis is a rare complication of anaplasmosis and can be exacerbated by concurrent use of statin medications. Therefore, atorvastatin was temporarily discontinued, and doxycycline was started to treat anaplasmosis. Her elevated CK levels improved, and renal function, liver function and blood counts normalized.

In anaplasmosis, systemic inflammation is mediated by cytokine release from infected neutrophils that results in skeletal muscle injury, leukopenia, thrombocytopenia and transaminitis. Statin-associated myopathy occurs in up to 5% of patients and is more common with high-intensity regimens such as Atorvastatin 80mg. In our case, Anaplasmosis likely compounded the mitochondrial dysfunction and oxidative stress induced by statins, resulting in severe rhabdomyolysis (CK>13,000 U/L). Tick-borne infections can cause muscle inflammation and injury but rhabdomyolysis complicating anaplasmosis, particularly when exacerbated by concurrent high-intensity statin therapy, has rarely been reported. Early recognition of this potential complication is critical as both statin-induced myopathy and anaplasmosis are reversible if promptly treated.

32) HEMORRHAGIC BRAIN METASTASES MASQUERADING AS ACUTE STROKE: AN ATYPICAL PRESENTATION OF METASTATIC ESOPHAGEAL NEUROENDOCRINE CARCINOMA

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Clinical Vignette

Esophageal Neuroendocrine Tumors (ENETs) represent fewer than 2% of esophageal cancers and tend to have very poor prognoses. Brain metastases are uncommon, and hemorrhagic transformation, usually seen in melanoma, renal cell carcinoma, and lung cancer, is even rarer. We report a case of hemorrhagic brain metastases from ENET producing focal neurologic deficits closely resembling ischemic stroke.A 75-year-old man with a history of metastatic poorly differentiated ENET (initially staged T3N1M0) diagnosed 4 years ago presented with abrupt right facial droop, slurred speech, and difficulty swallowing. He had previously undergone chemotherapy and radiotherapy and was currently on immunotherapy. His initial neurologic examination demonstrated right-sided facial weakness and dysarthria. His wife also reported subtle right-sided drooling starting two weeks before admission. A CT head demonstrated hyperdense abnormalities in both hemispheres with surrounding vasogenic edema. A CT head perfusion scan revealed no ischemia or penumbra, ruling out acute ischemic stroke. MRI brain diffusion-weighted imaging confirmed three hemorrhagic lesions at the gray-white junction (right frontal, left frontal, and left parietal) with the largest measuring 1.9 cm associated with mild mass effect. The patient's right facial weakness was attributed to mild Todd's paralysis, likely due to the left frontal lesion, rather than an ischemic etiology. He was treated with levetiracetam and dexamethasone. His oral anticoagulation was held, and after successfully undergoing Gamma Knife stereotactic radiosurgery, his neurologic function improved significantly.

A bidirectional relationship between malignancy and stroke is well established, with 15% of cancer patients experiencing stroke. Focal neurologic deficits that arise from metastatic brain masses are clinically indistinguishable from stroke. Hemorrhagic conversion in ENETs is driven by tumor-associated neovascularization involving fragile vasculature. MRI brain with contrast remains the first choice for localizing hemorrhagic metastases, and surrounding vasogenic edema is treated with dexamethasone, which is contraindicated in primary intracerebral hemorrhage. This case highlights the diagnostic challenge posed by hemorrhagic brain metastases from an extremely rare primary tumor, which could delay management and significantly worsen morbidity and mortality.

33) RENAL CELL CARCINOMA METASTASIS TO THE RIGHT VENTRICLE

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Clinical Vignette

Background: Renal cell carcinoma (RCC) accounts for 2% of cancer diagnoses. Many cases involve a mutation of the VHL gene, which causes upregulation of tumor-promoting factors and drives increased cellular migration and angiogenesis. This mutation is also the foundation for metastasis, which develops in ~33% of RCC cases and usually involves lungs, liver, bone, brain, and adrenal gland. Hematogenous spread via the renal vein is most common. The heart is a rare site of metastasis, usually occurring via direct spread through the IVC. While cardiac metastases affect up to 9.1% of patients with known malignancies, RCC is responsible for only 7-20% of cases. Most intracardiac metastases are clinically silent and discovered post-mortem.Case Presentation:

A 71 year old female with past medical history of localized scleroderma, mixed connective tissue disease, Raynaud's, peripheral vascular disease, and hypothyroidism presented to cardiology clinic with progressive dyspnea at rest and with minimal exertion, fatigue, and new orthopnea. Five months prior, evaluation for abdominal discomfort had revealed a hemorrhagic left renal mass. Since then, she had developed a persistent, non-productive cough and 15-lb unintentional weight loss. At the appointment, a transthoracic echo was obtained showing a 4.0x3.7 cm right ventricle free wall mass with central cavitation, moderate pericardial effusion, and end-diastolic right ventricular collapse. She was referred to the emergency department.In the emergency department, she had substernal chest pain reproducible with palpation, pericardial friction rub, and mild diffuse abdominal tenderness. Labs showed new anemia, normal white blood cell count, elevated high-sensitivity troponin. CT scans showed pulmonary nodules and unchanged left renal mass. She underwent pericardial drain placement with removal of 175 ml of straw-colored fluid. Pericardial fluid analysis showed numerous red blood cells and nucleated cells; cytology was negative for malignancy. Cardiac MRI later showed centrally necrotic basal right ventricle mass and evidence of acute pericarditis. Her admission was complicated by new multifocal atrial tachycardia. Renal mass biopsy revealed chromophobe renal cell carcinoma. There were no surgical options for the cardiac mass, so the patient pursued radiation therapy. The patient declined targeted therapy, opting to focus on quality of life.

Discussion: Chromophobe renal cell carcinoma (chRCC) is a rare subtype, comprising 5% of cases. Metastases are rarer in this subtype, primarily occurring via hematogenous spread to the liver or lungs, but the presence of metastases portends a poor prognosis. Immunotherapy is often preferred to chemotherapy as chRCC has been found to be highly resistant to many chemotherapeutic agents. This patient's options were complicated by her autoimmune disease, which put her at risk of reactivation with immunotherapy. Cardiac metastases can be mistaken for thrombi or primary tumors, therefore cardiac MRI or PET imaging offer the best characterization on imaging. Myocardial metastases can cause arrhythmias, conduction blockages, heart failure, and ventricular wall rupture. While pericardial involvement can precipitate pericardial effusions, many such effusions are not directly linked to malignancy. When pericardial fluid is obtained, tumor markers can be tested for to aid in diagnosis.

34) A WANDERING FILTER: BILIARY DUCTAL DILATATION ASSOCIATED WITH A MIGRATED INFERIOR VENA CAVA FILTER

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Clinical Vignette

Introduction: Inferior vena cava (IVC) filters prevent pulmonary embolism when anticoagulation is contraindicated, but retrievable filters left in place long-term carry under-recognized risks including fracture, migration, and caval penetration. Extra-caval filter components rarely affect adjacent abdominal organs. We describe a migrated IVC filter abutting the ampulla of Vater that contributed to biliary ductal dilatation and cholangitis.

Case Description: A 54-year-old woman with Crohn's disease on risankizumab, hypertension, and a remote deep vein thrombosis treated with an IVC filter placed in 2007 (never retrieved) presented with acute right upper quadrant and epigastric pain, rigors, nausea, and vomiting after a fatty meal, following months of intermittent biliary-type pain. She was febrile and leukocytic (white blood cell count 14.2 × 10□/L) with a mixed hepatocellular–cholestatic pattern (aspartate aminotransferase 707 U/L, alanine aminotransferase 418 U/L, alkaline phosphatase 118 U/L, total bilirubin 1.7 mg/dL) and a normal lipase.

Computed tomography and magnetic resonance cholangiopancreatography showed cholelithiasis and biliary ductal dilatation up to 10 mm without a discrete obstructing stone or mass; notably, the IVC filter projected outside the cava and was felt to exert mass effect on the ampulla.

She was treated for cholangitis with piperacillin-tazobactam, yet total bilirubin rose from 1.7 to 4.5 mg/dL. Endoscopic retrograde cholangiopancreatography revealed an inflamed, prominent ampulla with the filter visualized immediately posterior; sphincterotomy and balloon sweep extracted small stones and debris, and a plastic common bile duct stent was placed. Despite biliary decompression, bilirubin remained elevated (peak 4.2 mg/dL). Interventional radiology then performed complex retrieval of the migrated filter, requiring a laser sheath and removal of a fractured tine. Only after retrieval did bilirubin fall (to 2.5 mg/dL), with symptom resolution; she was discharged with planned outpatient stent removal.

Discussion: This case illustrates a rare abdominal complication of a long-retained IVC filter. The strongest signal that the migrated filter contributed to biliary obstruction is temporal: bilirubin climbed despite antibiotics, remained elevated even after endoscopic sphincterotomy with stone extraction, and declined only after filter retrieval. Although treated choledocholithiasis was a concurrent contributor, this sequence implicates extra-caval filter mass effect on the ampulla as an additional, rarely reported mechanism of cholestasis. Two lessons emerge: First, retrievable IVC filters frequently go unretrieved; this one remained in place for nearly two decades before fracturing and migrating, underscoring the need for structured tracking and retrieval programs. Second, biliary ductal dilatation carries a broad differential, and anchoring on the most common cause risks missing concurrent contributors. The clinical pearl: consider migrated filter components in any patient with an indwelling IVC filter and unexplained cholestasis, and ensure every retrievable filter has a documented plan for removal.

35) FULMINANT GIANT CELL MYOCARDITIS: A CLINICAL VIGNETTE

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Clinical Vignette

Intro: Giant Cell Myocarditis (GCM) is a rare cause of myocarditis accounting for only 3-5.6% of all myocarditis. However, in one study, it accounted for 18% of fulminant myocarditis and had the highest 1-year mortality rate among causes of myocarditis. Early recognition of features of GCM and initiation of targeted therapies is crucial for improved outcomes. GCM has features that are often more severe and require unique treatments compared to other causes of myocarditis.

Clinical Vignette: In this clinical vignette, the patient is 41M and experienced 2 weeks of dyspnea, orthopnea, chest pain and decreased exertional capacity following upper respiratory infection and was referred to ED on outpatient EKG showing atrial fibrillation with rapid ventricular response. PMH significant for OSA, HTN, Obesity BMI of 41kg/m2. Troponin was 1,700 and BNP 15,000 with normal CRP and ESR. Echo showed severe biventricular failure. Over the course of one day, he became hypotensive and care was elevated to ICU with uptrending lactates. He also developed significant conduction abnormality with 4.7s of ventricular standstill and syncope requiring emergent placement of transvenous pacing. Coronary arteries were nonobstructive. Decision was made to place RV and LV assist devices. However, despite flow of 3.6-3.9 L/min, he continued to have evidence of poor perfusion with hypotension and uptrending lactate while on 3 pressors. Decision was made to cannulate with VA-ECMO and transfer to tertiary care center. There, endomyocardial biopsy confirmed Giant Cell Myocarditis. The patient was subsequently started on antithymocyte globulin, mycophenolate mofetil, and methylprednisone with plan for steroid taper for transplant. The patient had ongoing ventricular arrhythmias and was continued on amiodarone and lidocaine drips. The patient was not a candidate for transplant as BMI was absolute contraindication. Long term BVAD support was considered as bridge to transplant. However, patient passed prior to definitive management with transplant.

Discussion: This case provides an example of how quickly patients with GCM can deteriorate. This is due to higher incidence of compounding features including biventricular failure, ventricular arrhythmias, and heart block compared to other causes of myocarditis. The population affected is also fairly young, from ages 42.6 to 60 years. It also highlights the importance of aggressive management with ventricular assist devices, temporary pacing, as well as treatment with immunosuppression beyond steroids. Medications usually include corticosteroids and at least 1 and often 2 additional immunosuppressive drugs such as cyclosporine/azathioprine or mycophenolate mofetil/tacrolimus. Treatment can also include antithymocyte globulin or alemtuzumab/cyclosporine. Lastly, it demonstrated an example of comorbidities as barriers to further management.

36) THE CERTIFICATION GAP IN RURAL CHEMOTHERAPY DELIVERY: EVIDENCE FROM A STATEWIDE ALL-PAYER CLAIMS ANALYSIS

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Research (Basic or Clinical)

Background: Rural cancer patients across the Midwest face well-documented disparities in access and outcomes. ASCO's Quality Oncology Practice Initiative (QOPI) certification and the American College of Surgeons' Commission on Cancer (CoC) accreditation aim to standardize high-quality cancer care. Still, it remains unclear whether these programs reach rural chemotherapy sites. Using Minnesota as a representative case, we compared rural and urban chemotherapy administration sites and their quality certification status.

Methods: Using the 2022 Minnesota All-Payer Claims Database, we identified billing providers with claims for carboplatin and paclitaxel (CPT: J9045, J9264, J9267). Providers were geolocated and classified as urban (RUCA 1–3) or rural (RUCA 4–10) by Rural-Urban Commuting Area code. QOPI certification status was obtained from ASCO and CoC accreditation status from ACS.

Results: Among 104 chemotherapy providers, 55 (53%) were rural, yet rural sites accounted for just 10,117 (27%) of 37,526 total claim lines. No rural provider (0%) was QOPI-certified, compared with 16% of urban providers. CoC accreditation showed the same pattern: 26% of rural versus 43% of urban providers.

Conclusions: Rural sites make up more than half of Minnesota's chemotherapy provider landscape but deliver a fraction of treatment volume, and not one carries QOPI certification. Given the comparable rural demographics and healthcare infrastructure across Wisconsin and neighboring states, these disparities likely extend well beyond Minnesota's borders. Closing this gap through targeted expansion of quality certification programs is an achievable step toward equitable cancer care across the rural Midwest.

37) DECEIVING ELEVATION IN SERUM CREATININE: A CASE OF PSEUDO TURNED REAL ACUTE KIDNEY INJURY CAUSED BY AN OBSTRUCTIVE BLADDER TUMOR

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Clinical Vignette

Introduction: Serum creatinine and cystatin C can be used to estimate glomerular filtration rate (GFR). In some clinical settings, there can be a discordance between serum creatinine and cystatin C, specifically when serum creatinine is elevated, and cystatin C is not. This should raise suspicion for pseudo-acute kidney injury, which can occur due to recirculation of serum creatinine, such as in the case of a urinoma, which is accumulation of extravasated urine outside of the urinary system typically in the retroperitoneal space. This can occur due to obstruction, trauma, or spontaneous rupture of the kidneys, ureters, or bladder. We present a case of forniceal rupture due to an obstructive bladder mass resulting in a urinoma and a pseudo-acute kidney injury.

Case: A 75-year-old man with metastatic neuroendocrine bladder cancer status post resection and radiation therapy on carboplatin, etoposide, and atezolizumab with an indwelling foley catheter was admitted for weakness and elevated serum creatinine of 1.42 (baseline of 0.8-1 mg/dL). Nephrology was consulted on day 4 for evaluation of rapidly rising serum creatinine. Initial renal ultrasound revealed mild bilateral hydronephrosis, stable from prior imaging. Urine microscopy showed sterile pyuria without casts. The initial differential included acute interstitial nephritis (AIN) secondary to immune checkpoint inhibitor therapy and/or acute tubular necrosis. Despite initiation of prednisone for presumed AIN, serum creatinine rose to 7.8 mg/dL on day 12, however, cystatin C remained stable at 1.4 mg/L. Renal biopsy revealed mild interstitial fibrosis and tubular atrophy, with 20% focal segmental glomerulosclerosis, which is not unusual for his age. He became newly oligo-anuric on day 15, with peak serum creatinine of 9.89 mg/dL; with cystatin C now 1.8 mg/L. Repeat imaging revealed a left retroperitoneal urinoma due to forniceal rupture of the left kidney, with bilateral hydroureter, and left sided hydronephrosis worrisome for progressive obstructive bladder mass, and a left pleural effusion consistent with a urinothorax. Bilateral nephrostomy tubes were placed with subsequent post-obstructive diuresis with gradual improvement in serum creatinine back to baseline.

Discussion: Serum creatinine is freely filtered and secreted by the proximal tubule and is present in high concentrations in the urine. Cystatin C, however, is freely filtered and almost completely reabsorbed and catabolized by renal tubular epithelial cells, with negligible urinary excretion. In the setting of a urinoma, extravasated urine containing creatinine is reabsorbed across serosal surfaces, raising serum creatinine without a true decline in GFR. Cystatin C, absent from the urine, is unaffected by this artifact and remains a reliable marker of true kidney function. In this case, unremarkable imaging on admission led to a delay in diagnosis and resulted in a real oligo-anuric acute kidney injury. We highlight the importance of recognizing a discordance in serum creatinine and cystatin C, which should prompt imaging for the evaluation of possible urinoma in a patient with urologic history. Early recognition of this entity can prevent unnecessary procedures, including renal biopsy, and direct management toward relieving the underlying urologic obstruction and therefore preventing real kidney injury and sequelae.

38) ASSESSING PELVIC FLOOR DYSFUNCTION IN WOMEN WITH INFLAMMATORY BOWEL DISEASE USING A VALIDATED TOOL

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Research (Basic or Clinical)

Introduction: Pelvic floor dysfunction (PFD) is a burdensome and underrecognized condition among women with inflammatory bowel disease (IBD). Chronic bowel symptoms, altered pelvic anatomy, and psychological stress may contribute to PFD even in quiescent disease. No validated PFD screening protocol exists for IBD, and standardized assessment remains limited. We aimed to characterize PFD in women with IBD using the Pelvic Floor Distress Inventory-20 (PFDI-20).

Methods: We performed a retrospective analysis of female IBD patients ≥18 years offered the PFDI-20 during routine clinic visits at a tertiary center (April–November 2025). The PFDI-20 covers pelvic organ prolapse (POPDI-6), colorectal–anal distress (CRADI-8), and urinary distress (UDI-6), each scored 0–100 (higher = greater severity). The primary outcome was clinically elevated PFD (PFDI-20 ≥33.33). Continuous variables were summarized with medians (IQR); group comparisons used Wilcoxon, chi-square, or Fisher's tests. Univariate logistic regression identified independent predictors of elevated PFD.

Results: Eighty-nine (4.6%) patients completed the PFDI-20; 43.8% (n=39) had clinically elevated PFD (Table 1). Demographics and disease characteristics did not differ between groups, including age, BMI, IBD duration, or rates of Crohn's disease (60.0% vs 61.5%) or ulcerative colitis (48.0% vs 43.6%) (all p>0.28). Only prior pelvic floor physical therapy (PFPT) differed: women with elevated PFD had higher rates of prior PFPT or consultation (20.5% vs 4.0%, p=0.014), consistent with appropriate symptom-driven referral rather than a protective effect. PFPT was the sole predictor of PFD severity on logistic regression (OR 0.16, 95% CI 0.03–0.81, p=0.027) (Table 2); age, BMI, disease duration, disease type, and race/ethnicity were not associated with severity.

Discussion: PFD was common among women completing the PFDI-20 and was not associated with demographic or disease-related factors. The low completion rate (4.6%) may reflect selection bias toward more symptomatic patients, and may also reflect stigma and questionnaire burden, highlighting the need for simplified, non-stigmatizing screening tools integrated into routine IBD care. Symptoms spanned prolapse, urinary, and colorectal domains, underscoring IBD's multifactorial pelvic floor impact. Ongoing work includes multi-site data collection and implementation of shorter validated questionnaires to improve screening rates.

39) DEPRESSION-ASSOCIATED PSEUDODEMENTIA AS A MIMIC FOR EARLY-ONSET ALZHEIMER'S DISEASE

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Clinical Vignette

Introduction: Early-Onset Alzheimer's Disease (EOAD) is a rare and aggressive subset of Alzheimer's disease diagnosed before age 65 and is associated with an autosomal dominant expression of APP, presenilin 1, or presenilin 2 genes in approximately 10-15% of patients. Low levels of amyloid-β42 and elevated levels of total tau and phosphorylated tau proteins are biomarkers well documented in cerebrospinal fluid (CSF) of patients with EOAD. EOAD primarily presents as psychiatric symptoms before the emergence of amnestic symptoms, leading to delayed diagnosis or misdiagnosis with mimics such as depression-associated pseudodementia.

Case Description: A 45-year-old female with migraines and hypertension presented with depressive thoughts and passive suicidal ideation. She was diagnosed with major depressive disorder (MDD) but refused therapy and medications. One year later, she had worsened depressive symptoms and new memory loss and insomnia. The patient's MMSE score was 20/30, PHQ-9 score was 23, and GAD-7 score was 15. Testing for reversible causes of memory loss including B12, folate, TSH, urine drug screen, and EEG were all unremarkable. Patient was diagnosed with pseudodementia secondary to severe depression and started on amitriptyline, a medication she previously found beneficial for her migraines. On one-month follow up, the patient's memory worsened, with new expressive aphasia, decreased attention and comprehension, and persistent depression. Brain MRI revealed no acute abnormalities. Neuropsychiatric testing was inconclusive due to variable engagement during testing. After psychiatric evaluation, her amitriptyline dose was increased and bupropion was started for her severe MDD.

One month later, the patient was hospitalized due to hallucinations, paranoia, and concern for self-harm after she was found wandering her house while holding knives. Further testing for syphilis, HIV, and repeat brain MRI were all negative. Repeat EEG showed mild generalized slowing. Lumbar puncture was ultimately pursued, with CSF studies revealing elevated p-tau181/Aβ42 ratio, consistent with EOAD. Subsequent genetic testing revealed that the patient was positive for c.2149G>A (p.Val717Ile) pathogenic variant of the APP gene, associated with autosomal dominant EOAD. Ultimately, repeat neuropsychiatric testing confirmed frontal/executive predominant memory loss consistent with EOAD. The patient was started on medications for symptomatic management and referred to palliative care.

Discussion: This case illustrates a unique feature of EOAD, which is its presentation with predominantly psychiatric symptoms preceding amnestic symptoms, making this a challenging diagnosis. For middle-aged patients presenting with rapidly progressive psychiatric symptoms and subsequent cognitive impairment, clinicians should have a lower threshold for suspecting EOAD. In cases where neuropsychiatric testing is ambiguous, CSF testing of p-tau181/Aβ42 ratio can be an extremely useful tool due to its high sensitivity and specificity in diagnosing Alzheimer's disease. Similarly, earlier referrals for genetic testing for common pathogenic variants, including those associated with the APP gene should be considered. Early recognition of EOAD is crucial in allowing patients to receive timely genetic counseling and family risk analysis, initiating targeted disease modifying interventions early, and assisting in earlier planning of social and financial support for patients and their families.

40) CAUGHT IN CLINICAL CATCH-22: MECHANICAL VALVE MANAGEMENT COMPLICATED BY RECTUS SHEATH HEMATOMA AND CALCIPHYLAXIS IN A PATIENT ON HEMODIALYSIS.

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Clinical Vignette

Anticoagulation in patients with mechanical heart valves and end-stage renal disease (ESRD) poses a profound clinical dilemma. Vitamin K antagonists (VKAs) are standard for mechanical valves but trigger calciphylaxis. Conversely, alternative agents carry high hemorrhagic risks in uremia.

We present a case of suspected calciphylaxis from warfarin in patient with mechanical aortic valve who developed hemorrhagic shock from a rectus sheath hematoma while on low-molecular-weight heparin (LMWH).

Case Presentation: A 56-year-old female with ESRD on hemodialysis, coronary artery disease, and a history of mechanical aortic valve replacement presented with shortness of breath and was admitted for hypoxic respiratory failure.Previously on warfarin for mechanical aortic valve, but developed skin lesion concerning for calciphylaxis, (examination revealed indurated, exquisitely tender erythematous plaques with central necrotic areas on the bilateral upper inner thigh), and transitioned to enoxaparin (lovenox) 1mg/kg/day with factor Xa monitoring given ESRD. Patient was recommended a high INR goal 2.5-3.5 secondary to recurrent thrombosis with mechanical aortic valve. Given DOACs' inferiority to Warfarin for anticoagulation in mechanical valve patients, she was started on Lovenox. This transition was complicated by a massive rectus sheath hematoma, culminating in hemorrhagic shock secondary to large rectal sheath hematoma, required urgent surgical evacuation, after stabilization, was cautiously started on an intravenous unfractionated heparin (UFH) infusion.

Diagnostic Assessment & Hospital Course: Laboratory evaluation was notable for hyperphosphatemia and an elevated calcium-phosphate product. A skin punch biopsy of the thigh lesions was inconclusive for classic calciphylaxis and showed no definitive evidence of warfarin-induced skin necrosis. However, given the high pre-test probability and characteristic clinical distribution in a female patient with ESRD and recent VKA exposure, a clinical diagnosis of calciphylaxis was strongly suspected.

The patient was caught in a dangerous therapeutic dilemma: she required strict anticoagulation to prevent mechanical valve thrombosis, yet she had a recent life-threatening hemorrhage on LMWH and suspected calciphylaxis, making the resumption of warfarin highly dangerous. Cardiothoracic Surgery was consulted to evaluate the patient for urgent surgical explantation of the mechanical valve and implantation of a bioprosthetic valve to eliminate her long-term anticoagulation requirement.

Discussion: Managing a mechanical valve in the setting of active calciphylaxis and a recent life-threatening bleed represents an extraordinary clinical challenge. Warfarin is contraindicated as it inhibits Matrix Gla Protein, directly accelerating the microvascular thrombosis driving calciphylaxis. LMWH accumulated unpredictably in this patient's ESRD, causing a near-fatal rectus sheath hematoma. Direct oral anticoagulants (DOACs) remain strictly contraindicated for mechanical valves due to high thromboembolic failure rates.

In the acute inpatient setting, a continuous IV UFH infusion without a bolus is the safest choice due to its short half-life and reversibility. Ultimately, surgical conversion to a bioprosthetic valve is the definitive solution, removing the long-term anticoagulation requirement and allowing for aggressive calciphylaxis treatment. This case prompted a need for further studies on second line anticoagulants in mechanical valve patients with renal dysfunction.

41) TRAINING THE TRAINER: A PEER-LED TOOLKIT FOR BUILDING TRUE PSYCHOLOGICAL SAFETY IN THE RESIDENT LOUNGE

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Quality Improvement / Patient Safety / High-value Care / Physician Well-being & Professional Fulfillment

Introduction: The resident lounge is intended to be a sanctuary, yet it frequently echoes with cumulative clinical stress, imposter syndrome, and unprocessed moral injury. While institutional wellness initiatives often focus on top-down, mandatory lectures, true psychological safety is built laterally through vulnerable, peer-to-peer connection. New PGY2 residents face immense pressure to project absolute competence, leaving little room to process the emotional toll of clinical medicine. When residents feel judged by their peers, the lounge becomes a space of isolation rather than decompression. To reclaim this vital space, we designed and implemented "Room to Breathe," a peer-led, grassroots toolkit aimed at embedding non-judgmental communication, patience, and authentic psychological safety directly into resident culture.

Methods: The toolkit focuses on three peer-led structural pillars:

1. The "Vulnerability Primer": PGY2 residents deliberately de-stigmatize professional struggle by sharing their own past clinical missteps, near-misses, and emotional hurdles with co-residents and interns, establishing a culture where it is safe to not know everything.
2. The Active Listening/Patience Framework: Simple, visible lounge scripts, structured storytelling, and peer activities instruct residents on how to receive a colleague's venting with empathy and validation, rather than immediately jumping to unsolicited clinical judgment or problem-solving.
3. Safe Space Norms: A co-created code of conduct posted directly in the lounge establishes strict boundaries regarding gossip, horizontal hostility, and competitive medical comparison.

Anonymized pre- and post-intervention surveys were utilized to track changes in the lounge climate, perceived peer support, and comfort levels when asking vulnerable clinical questions.

Results: Post-implementation, a profound shift in lounge culture was observed. By allowing PGY2 residents to finally let their guard down, this explicit toolkit equips them to express patience with themselves and their colleagues under acute systemic pressure. For interns, this culture significantly reduces the fear of asking their seniors complex, basic, or technical clinical questions. By cultivating a relaxed, non-judgmental atmosphere in the lounge, these supportive behaviors translate directly onto the medical wards, evidently improving patient care, bridging critical communication gaps, and fostering cohesive, high-functioning clinical teams.

Conclusion: Residency programs often mandate wellness, but top-down mandates cannot provide the grassroots structural framework necessary to protect interns and new PGY2s. This peer-led toolkit demonstrates that simple, targeted cultural activities can completely transform the training phase, molding interns into highly competent, well-trained, kind, and humble physicians. Ultimately, psychological safety is the foundational core from which the identity of the upcoming physician grows. "Room to Breathe" represents a zero-cost intervention that fosters profound professional fulfillment, builds instructional patience, and directly buffers against systemic training burnout.

Medical Student Posters

1) A CASE OF CEFEPIME-INDUCED ENCEPHALOPATHY

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Clinical Vignette

Introduction: Cefepime is a broad-spectrum antibiotic that offers excellent coverage for many types of bacterial infections, making it a first line agent in critically ill patients. However, Cefepime has been linked to neurotoxicity, with up to 15% of ICU patients who received Cefepime developing signs of neurotoxicity. Of these patients, 80% had underlying renal dysfunction, making it the single biggest risk factor for developing neurotoxicity.

Case presentation: A 68 year old male with a history of renal dysfunction, DM2, and pre-existing brain vulnerabilities with full baseline cognitive function was brought into the ER by EMS after being found unresponsive from hypoglycemia. The patient was intubated, admitted to the medical ICU, and started on dextrose with correction of his hypoglycemia, with no recurrence of hypoglycemia during his hospital stay. After initial correction of hypoglycemia, he regained consciousness; however, he showed no improvement in encephalopathy, which initially presented as expressive aphasia. During this time, he was found to have aspiration pneumonia that grew positive for Pseudomonas aeruginosa and was started on Cefepime. His oxygen requirements improved, and he was discharged to a medical ward. Within one day of transfer out of the ICU, his encephalopathy progressed, presenting as solely being able to answer yes/no, with answers inappropriate to the question, demonstrating a lack of comprehension. The patient remained at this level of mentation for another 24 hours with no improvement, making ICU associated delirium a less likely explanation for his encephalopathy. Due to concern for Cefepime-induced encephalopathy, Cefepime was discontinued, and treatment with Zosyn was initiated. Within 24 hours, the patient became nonverbal; however, he was able to maintain eye contact and follow commands. This represented the biggest improvement in cognition since admission. Within 48 hours of discontinuing Cefepime, the patient was able to whisper answers to questions, had significant improvement in orientation, and demonstrated true comprehension.

While admitted, the patient was extensively worked up for both common and uncommon causes of encephalopathy. The full infectious workup, including an LP, remained positive only for Pseudomonas aeruginosa. His MRI was negative for acute infarcts or hemorrhage. EEG showed moderate generalized slowing consistent with diffuse encephalopathy, with no evidence of seizures. Based on extensive workup and clinical improvement after cessation of antibiotics, the diagnosis of Cefepime-induced encephalopathy was made.

Discussion: Here, we present a case of Cefepime-induced encephalopathy. This often presents in critically ill patients who may present with delirium for multiple causes, making this diagnosis an overlooked cause of changes in mentation. The biggest risk factor for developing neurotoxicity from Cefepime is renal dysfunction, as it is renally cleared, with decreased clearance leading to drug accumulation. Higher levels can penetrate the CNS and antagonize GABA-A receptors, causing neuronal hyperexcitability and delirium. Additional risk factors include older age, critically ill patients, pre-existing brain vulnerabilities, existing encephalopathy, and polypharmacy. This case aims to increase clinicians' awareness of this diagnosis, as early recognition can decrease morbidity and mortality.

2) A CLASSIC PRESENTATION OF CREST SYNDROME: THE PHENOTYPE DOES LIE

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Clinical Vignette

Introduction: Systemic sclerosis is a rare autoimmune disease characterized by inappropriate immune activation of fibroblasts, leading to systemic collagen deposition and fibrosis. There are two categories of disease, each with unique underlying etiology and symptoms. In the diffuse cutaneous subtype, collagen deposition is systemic, affecting multiple organ systems and resulting in diffuse skin findings. This subtype is associated with visceral deposition, which causes interstitial lung disease, and significant renal involvement, which may lead to renal crisis. In limited cutaneous disease (CREST syndrome), deposition is limited to the hands, face, small vessels, and pulmonary vasculature. This classically manifests as calcinosis, Raynaud's phenomenon, esophageal dysmotility, Sclerodactyly, and telangiectasia. These patients typically present with pulmonary hypertension, and are less likely to have renal involvement. While PMHT may be present in both subtypes, it is much less common in the diffuse cutaneous subtype. Here we present a case of a patient who was diagnosed with the diffuse cutaneous subtype, presenting with associated ILD, who also presented with CREST manifestations and pulmonary hypertension.

Case presentation: The patient is a 71 year old female who was diagnosed with systemic sclerosis in 1988, with antibody testing confirming anti-RNA polymerase III antibodies. The patient developed ILD and had a scleroderma renal crisis in the past. Currently, she presents with ILD, pulmonary hypertension, and a classic CREST presentation, including calcinosis, sclerodactyly, digital ulceration, Raynaud phenomenon, GERD, and dysphagia. Her physical exam on admission demonstrated diffuse bilateral inspiratory "Velcro" crackles associated with ILD, sclerodactyly with fingertip ulcerations, and no proximal skin findings typically associated with the diffuse cutaneous subtype. The patient presented for progressive dyspnea and increased oxygen requirements, and was admitted for acute hypoxic respiratory failure. A CT chest was performed, demonstrating stable fibrotic ILD. CTA excluded PE, and her infectious workup remained negative. Her echocardiogram showed severe pulmonary hypertension with a PASP of 71 mmHg, though her RHC showed improvement of her pulmonary hypertension from previous years. The cause of the flare was attributed to a progression of heart failure, and the patient improved with diuresis and medical therapy for heart failure.

Discussion: Here we present an unusual manifestation of pulmonary hypertension in diffuse scleroderma. In the literature, PMHT is usually seen in limited scleroderma; however, it may be seen in the diffuse cutaneous subtype in a lower percentage of patients. This presentation represents the importance of antibody testing when confirming a diagnosis of systemic sclerosis. Although most patients present with features strongly suggestive of one subtype, there are cases in which these findings may be misleading. Antibody testing is the only definitive diagnostic test and should be performed even when a patient has a phenotype strongly suggestive of a single subtype. The antibody associated with the diffuse cutaneous subtype is anti-RNA polymerase III antibody, while CREST is associated with anti-centromere antibody. Understanding the underlying cause of the presentation dictates disease control and treatment. However, due to the spectrum of phenotypical presentations, all patients should have continuous surveillance for renal complications, pulmonary hypertension, ILD, and cutaneous findings.

3) INTRACRANIAL-PREDOMINANT GIANT CELL ARTERITIS WITH RECURRENT POSTERIOR CIRCULATION STROKES REFRACTORY TO GLUCOCORTICOID THERAPY

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Clinical Vignette

Introduction: Giant cell arteritis (GCA) typically involves the extracranial branches of the carotid artery in adults over age 50. Intracranial involvement is uncommon but increasingly recognized as a distinct phenotype with higher risk of posterior circulation stroke and is often refractory to glucocorticoid therapy. A recent systematic review reported stroke as the presenting feature in nearly 70% of intracranial GCA cases, most often in the vertebrobasilar territory. When temporal artery biopsy is unavailable or non-diagnostic, the diagnosis can be difficult to establish.

Case Description: A 59-year-old white man with hypertension, hyperlipidemia, obstructive sleep apnea, and moderate aortic valve stenosis presented with a six-month course of progressive headache, transient visual disturbances, lightheadedness, and lower-extremity claudication. Inflammatory markers were elevated (ESR 56 mm/h, CRP 26.2 mg/L), and high-resolution vessel wall MRI showed concentric wall thickening and post-gadolinium enhancement of the bilateral vertebral arteries, intracranial internal carotid arteries, superficial temporal arteries, and right posterior inferior cerebellar artery. Despite five days of intravenous methylprednisolone followed by oral prednisone 60 mg daily, the patient developed new multifocal infarcts in the right occipital lobe and bilateral cerebellar hemispheres and was transferred for further evaluation. Temporal artery biopsy was deferred given more than two weeks of prior glucocorticoid exposure. Workup for vasculitis mimics was negative, including ANCA, IgG4, antiphospholipid antibodies, cryoglobulins, aquaporin-4 and MOG antibodies, Bartonella henselae and B. quintana serologies, and CSF oligoclonal bands. Serum angiotensin-converting enzyme was at the low end of normal, with interpretation limited by concurrent lisinopril therapy. CSF analysis showed elevated protein (133 mg/dL) without pleocytosis, a normal IgG index of 0.62, and an elevated CSF/serum albumin quotient of 16.88 consistent with blood-brain barrier dysfunction. The patient received pulse-dose intravenous methylprednisolone followed by oral prednisone 80 mg daily and a single dose of intravenous tocilizumab 6 mg/kg, with planned weekly subcutaneous tocilizumab. He was discharged in stable condition with resolution of headaches and improvement in visual symptoms.

Discussion: Intracranial-predominant GCA is worth considering in older patients with cryptogenic posterior circulation stroke and elevated inflammatory markers, even when classical cranial symptoms are absent or atypical. Vessel wall MRI can support the diagnosis when temporal artery biopsy is not feasible or is delayed past the usable two-week glucocorticoid window. Tocilizumab is approved for new-onset and relapsing GCA and is recommended for glucocorticoid-refractory disease; in this case, it was started early after the patient continued to develop ischemic events on high-dose steroids. After tocilizumab is started, CRP is suppressed independent of disease activity, so clinical assessment and serial imaging become more important than laboratory markers for ongoing monitoring.

4) SEVERE PRE-CAPILLARY PULMONARY HYPERTENSION OF UNDETERMINED ETIOLOGY IN A PATIENT WITH METASTATIC PROSTATE CANCER AND WALDENSTRÖM MACROGLOBULINEMIA

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Clinical Vignette

Introduction: Pulmonary hypertension (PH) in patients with malignancy can result from several different mechanisms, including pulmonary tumor thrombotic microangiopathy (PTTM), drug-induced lung injury, lymphoproliferative pulmonary involvement, and thromboembolic disease. Distinguishing among these antemortem is often not possible, and PTTM in particular is frequently diagnosed only at autopsy. We present an older man with metastatic prostate adenocarcinoma and Waldenström macroglobulinemia who developed rapidly progressive severe pre-capillary PH of unclear etiology, resulting in death before treatment could be initiated.

Case Description: An 81-year-old man with metastatic castration-resistant prostate cancer (PSA 0.08, biochemically controlled on androgen deprivation therapy), Waldenström macroglobulinemia on pirtobrutinib (high-risk cytogenetics including TP53 loss and monosomy 17, with decreased IgM on recent oncology follow-up), Merkel cell carcinoma, coronary artery disease, and paroxysmal atrial fibrillation presented with two months of progressive dyspnea. A recent admission had been attributed to suspected Bruton Tyrosine Kinase Inhibitor (BTK) inhibitor pneumonitis with partial steroid response. He returned with worsening hypoxia. CT chest showed multifocal ground-glass and consolidative opacities without pulmonary embolism. Bronchoalveolar lavage was negative for infection. Echocardiography showed progression of estimated pulmonary artery systolic pressure from 72 mmHg one month earlier to at least 115 mmHg by tricuspid regurgitant jet, with severely enlarged right atrium, mildly enlarged right ventricle with preserved systolic function (TAPSE 1.96 cm), severe tricuspid regurgitation that had progressed from moderate, and no shunt on agitated saline. Right heart catheterization confirmed severe pre-capillary PH with mean pulmonary artery pressure 36 mmHg, pulmonary capillary wedge pressure 3 mmHg, cardiac index 1.36 to 2.05 L/min/m2, pulmonary vascular resistance 12.9 Wood units, and mixed venous oxygen saturation 40%. Arterial blood gas showed compensated metabolic acidosis consistent with tissue hypoperfusion. The consulting PH team identified the working diagnosis as suspected PTTM versus Group 5 PH from lymphoproliferative disease. Pulmonary vasodilator therapy was precluded by hypotension. Within 24 hours of catheterization, the patient developed unwitnessed cardiac arrest unresponsive to resuscitation.

Discussion: Severe pre-capillary PH in a patient with multiple competing etiologies is a real diagnostic problem, particularly when both underlying malignancies appear biochemically controlled. In this case, either microscopic tumor embolism from prostate cancer or lymphoproliferative pulmonary involvement from Waldenström macroglobulinemia could plausibly account for the rapidly progressive pulmonary vascular disease. Preserved right ventricular wall thickness despite severely elevated pulmonary artery pressures suggested an acute or subacute course rather than chronic disease. Echo-estimated PASP substantially overestimated invasive measurements due to severe tricuspid regurgitation, a recognized limitation in this setting. PTTM is rarely diagnosed antemortem, and early recognition that vasodilator therapy is not an option may help guide the conversation toward comfort care.

5) TRIMETHOPRIM-SULFAMETHOXAZOLE-INDUCED DRESS SYNDROME IDENTIFIED THROUGH PHARMACY RECONCILIATION

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Clinical Vignette

Introduction: Drug reaction with eosinophilia and systemic symptoms (DRESS) is a delayed, potentially life-threatening hypersensitivity reaction marked by morbilliform rash, eosinophilia, and visceral organ involvement, usually arising two to eight weeks after exposure to a culprit medication. Trimethoprim-sulfamethoxazole is one of the more commonly implicated antibiotics. Prompt withdrawal of the offending drug is essential, but identifying it can be difficult when patients do not recall the exposure.

Case Description: A 43-year-old woman with recurrent urinary tract infections presented to the emergency department with a two-week history of diffuse pruritic rash. She had been seen two weeks earlier and discharged on topical hydrocortisone and cephalexin for presumed urinary tract infection. The rash transiently improved but recurred and spread to involve approximately 70% of body surface area. She also reported subjective fevers, chills, and fatigue. On presentation she was hypotensive (94/55 mmHg, partially responsive to fluids), tachycardic, and febrile to 100.3°F, with a diffuse morbilliform eruption involving the chest, abdomen, arms, and face. Bilateral conjunctival injection was noted without mucosal involvement, bullae, or skin sloughing. Laboratory studies showed peripheral eosinophilia (11%, absolute 0.84×10^9/L), lymphopenia, and mild transaminitis (ALT 56 U/L, AST 45 U/L). The patient initially denied any recent antibiotic exposure. Chart review identified a prescription for trimethoprim-sulfamethoxazole filled several days before symptom onset, and pharmacy callback confirmed the medication had been picked up; ingestion was subsequently confirmed by the patient. Punch biopsy showed spongiotic and interface dermatitis compatible with drug eruption. Oral prednisone 1 mg/kg/day and twice-daily triamcinolone wet wraps were started. The rash, eosinophilia, and transaminitis improved within 48 hours. The patient was discharged on a six-week prednisone taper with planned outpatient dermatology follow-up and thyroid function testing at three and six months.

Discussion: DRESS syndrome carries a mortality rate of approximately 10%, most often from fulminant hepatitis, and requires prompt withdrawal of the culprit drug along with systemic glucocorticoids. The RegiSCAR scoring system is commonly used for diagnosis and integrates clinical, laboratory, and histologic features; this patient met five of seven criteria. Two practical points stand out from this case. First, the overlap between early DRESS and simple morbilliform drug eruption can be hard to resolve, and starting treatment empirically may be reasonable to prevent progression to organ failure. Second, when a patient does not recall a recent medication, pharmacy records may be the only way to confirm exposure. Patients should be counseled to avoid the offending drug for life and monitored for delayed autoimmune sequelae such as thyroiditis.

6) FIREARM INJURIES AT HOME: DIFFERENCES BETWEEN FEMALES AND MALES AND THE IMPACT OF INTIMATE PARTNER VIOLENCE

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Research (Basic or Clinical)

Introduction: Men have a higher incidence of firearm injury than women, both nationally and in Milwaukee, Wisconsin. Additionally, men are more likely to sustain injuries in the community than inside their homes. Further research is warranted to understand the context and geographic location of firearm injuries sustained, and the connection to intimate partner violence (IPV). The objective of this study was to examine sex differences in firearms injuries inside the home and describe characteristics of injury incidents and injury outcomes that may inform interventions for survivors seeking medical care.

Hypothesis: Compared to women, men will have sustained more firearm injuries outside the home and will have fewer injuries related to IPV.

Study Methods: Patients (≥18 years old) treated at a level I trauma center who experienced a firearm injury at their home between 2015-2023 were included. Injured patients' residential addresses and injury locations were geocoded with injuries at home defined as <0.1 miles from the patients' residence. Exclusions included self-inflicted, police-involved, injuries outside of Milwaukee County, WI, and victims without homes. Demographics, injury outcomes, and socioeconomic variables were collected via extensive chart review including relationship between the shooter and patient, history of IPV, risk of post-traumatic stress disorder (PTSD) or depression, and in-hospital mortality.

Results: There were 118 females and 392 males included. The median age for females was 30 and 32 for males. A history of IPV was more common in females versus males (55% vs. 11%; $p<0.001$). Overall, 82% of females and 61% of males were shot by a person they knew. While males were more often shot by an acquaintance compared to females (41% vs. 29%), females were more often shot by an intimate partner/significant other (IP/SO) compared to males (37% vs. 4%; $p<0.001$). Among females and males, Black or African American patients represented 72% and 81% of those shot at home, respectively. Medicaid was the primary payor for 69% of females and 72% of males ($p=0.068$). Females and males had similar risk of post-injury PTSD (27% and 30%), depression (4% and 1%), or both (51% and 44%; $p=0.2$) as well as mortality (15% and 10%; $p=0.11$).

Conclusion: Firearm injuries occurring within the home remains a complex and concerning issue. Although most victims knew the shooter, females were more often shot by an IP/SO. This indicates a need for in-home interventions for prevention, including awareness of the risks of a firearm within a home, education on safe gun storage, limiting access to firearms for those with a history of committing IPV-related offences, and resources for those facing conflicts in their home. There was also significant burden of mental health risk overall underscoring the need for early mental health resource provision for this patient population. Trauma centers can serve as a frontline resource for comprehensive care for this patient population; however, improved risk screening protocols and documentation are needed to tailor interventions for IPV and non-IPV related firearm injuries. Future collaboration with the police may also be needed to understand the full context of the incident.

7) SUSPECTED EARLY NITROUS OXIDE NEUROTOXICITY DESPITE NORMAL METHYLMALONIC ACID

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Clinical Vignette

Recreational nitrous oxide use is increasingly common among adolescents and young adults. Nitrous oxide oxidizes the cobalt atom of cobalamin, impairing cobalamin-dependent enzyme activity, including methionine synthase, and can produce neurologic injury even when serum vitamin B12 is normal. Functional markers such as homocysteine and methylmalonic acid can support the diagnosis, but early presentations may lack classic laboratory or hematologic abnormalities.

An 18-year-old man with borderline personality disorder, ADHD, prior substance-induced psychosis, and polysubstance use presented three to four hours after taking 500-600 mg of diphenhydramine for euphoria, without suicidal intent. He was altered, tachycardic, and normotensive, with auditory hallucinations. Following the recommendation of poison control and toxicology, he received N-acetylcysteine for an overdose complicated by transaminitis, along with lorazepam. His course was complicated by suicidal ideation and self-harm, requiring transfer to the crisis intervention unit.

During admission, a more comprehensive history related to substance use was obtained. The patient reported inhaling nitrous oxide from tanks, roughly 400-700 grams daily for three months; the last use was three days before hospital arrival. He described numbness in both great toes, burning paresthesia of both hands, glossitis, fatigue, palpitations, and short-term memory problems. He denied weakness, gait instability, falls, urinary symptoms, and loss of fine motor skills, and he was neither a vegetarian nor a vegan.

Serum vitamin B12 level was 244 pg/mL, low-normal and within the indeterminate range below 300 pg/mL, with an MCV of 96 fL at the upper end of the normal range (80-100 fL). Methylmalonic acid was normal at 0.20 umol/L, hemoglobin was 13.4 g/dL, and creatinine was 0.77 mg/dL. The combination of a low-normal B12 and high-normal MCV, together with his exposure history and characteristic sensory syndrome, raised suspicion for nitrous oxide-associated neurotoxicity. He was treated empirically with intramuscular cyanocobalamin 1,000 mcg for three doses, followed by oral cyanocobalamin 1 mg daily, with counseling to discontinue nitrous oxide use.

This case highlights that nitrous oxide neurotoxicity can occur without the classic findings of overt B12 deficiency: methylmalonic acid may be normal, anemia may be absent, and the B12 level may be only borderline, as in our patient. A low-normal B12 and high-normal MCV prompted suspicion, but these clues are not always present. A thorough substance use history, including collateral history, is therefore essential, since early recognition, cessation of nitrous oxide use, and B12 repletion may prevent progression to irreversible neurologic injury.

8) ALLOGRAFT AND PREGNANCY OUTCOMES IN KIDNEY TRANSPLANT RECIPIENTS: TWO-DECADE RETROSPECTIVE COHORT STUDY FROM A SINGLE CENTER

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Research (Basic or Clinical)

Introduction: Pregnancy after kidney transplantation (KT) is increasingly common, but the effect of post-transplant pregnancy on long-term kidney allograft survival remains uncertain. We evaluated allograft and pregnancy outcomes among female KT recipients at a single academic center over two decades.

Methods: We conducted a single-center retrospective cohort study of female KT recipients transplanted between 2004 and 2023. Patients were stratified by whether they experienced pregnancy after KT. The primary outcome was long-term allograft failure, compared between recipients with and without post-transplant pregnancy. Secondary outcomes included kidney function indices before, during, and after pregnancy as well as maternal and fetal outcomes.

Results: The cohort included 98 female KT recipients, of whom 21 experienced post-transplant pregnancy, and 77 did not. Women with post-transplant pregnancy were younger at transplant than those without pregnancy: mean age 23.1 versus 37.3 years, $p<0.001$. Baseline allograft function was similar between groups, including serum creatinine: 1.41 versus 1.88 mg/dL, $p=0.243$; eGFR: 60.6 versus 51.6 mL/min/1.73m2, $p=0.158$; and urine protein-to-creatinine ratio: 0.17 versus 0.45 g/g, $p=0.224$. Mean follow-up was 18.4 years in the pregnancy group and 11.6 years in the non-pregnancy group. Long-term allograft failure did not differ significantly between groups: 28.6% versus 20.8%, $p=0.448$. Kaplan-Meier analysis similarly showed no significant difference in graft survival by pregnancy status, $p=0.49$. Among 37 post-transplant pregnancies, 65.7% followed living donor KT. Mean transplant-to-pregnancy interval was 12.9 years. Kidney function showed modest changes across pregnancy, with serum creatinine increasing from 1.27 mg/dL pre-pregnancy to 1.51 mg/dL during pregnancy and 1.59 mg/dL postpartum, while eGFR decreased from 62.0 to 58.0 mL/min/1.73m2 postpartum. No rejection episodes occurred during pregnancy. Maternal and fetal complications remained notable, including preeclampsia in 19.4%, early pregnancy loss in 28.6%, preterm birth in 45.7%, stillbirth in 2.9%, and NICU admission in 12.0% of pregnancies with available data.

Conclusion: In this single-center cohort, pregnancy after KT was not associated with significantly worse long-term allograft survival. However, clinically meaningful maternal and fetal risks persisted, highlighting the need for preconception counseling, multidisciplinary management, and close allograft and obstetric monitoring.

9) AN OVERLAPPING CARDIOMYOPATHY PRESENTATION IN THE SETTING OF EVOLVING SHOCK

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Clinical Vignette

Background: Sepsis-induced cardiomyopathy (SICM) is an acute, reversible ventricular dysfunction in septic shock that remains poorly characterized due to lack of consensus definition. A closely related condition, Takotsubo syndrome (TTS), is a transient cardiomyopathy triggered by severe stress. Both share catecholamine-mediated myocardial stunning as a central mechanism, yet the boundaries between them remain poorly defined. We present a case highlighting this overlap in a patient with streptococcal toxic shock syndrome (STSS) complicated by evolving multifactorial shock.

Case: A 54-year-old male with anxiety, depression, hyperlipidemia, and recent methamphetamine use presented with acute nausea, vomiting, diarrhea, and left upper extremity (LUE) pain following a crush injury sustained 1.5 weeks earlier. He presented in hypovolemic shock, was resuscitated with 4 liters of IV fluids, and remained unstable, requiring norepinephrine. CTA revealed segmental pulmonary emboli with RV strain, classified as high-risk PE and Tenecteplase produced minimal hemodynamic effect. TTE showed severe biventricular dysfunction with global hypokinesis and LVEF 20%, with worsening shock requiring vasopressin and dobutamine. Blood cultures grew Group A Streptococcus, reframing the picture as SICM from STSS. LUE swelling and hemorrhagic bullae prompted surgical exploration, confirming GAS-positive deep tissue cultures consistent with necrotizing soft tissue infection. A second debridement one week later showed healthy tissue with negative cultures, confirming source control. Serial echocardiography demonstrated LVEF recovery from 20% to 43% by day 4 and complete normalization to 72% by day 14. The medicine team classified the cardiomyopathy as "stress cardiomyopathy," reflecting persistent diagnostic uncertainty.

Discussion: This case illustrates an evolving shock classification, initially as hypovolemic, later reclassified as obstructive due to PE, and ultimately cardiogenic from SICM in the setting of STSS. To our knowledge, few reported cases capture this degree of overlapping shock physiology alongside biventricular SICM/TTS features. Both SICM and TTS are characterized by markedly elevated NT-proBNP with only mildly elevated troponin, as seen here (NT-proBNP 23,364 pg/mL; hs-troponin T 32 ng/L), consistent with catecholamine-mediated stunning rather than ischemic injury. The complete LVEF recovery over two weeks supports this reversible mechanism. Multiple catecholaminergic stressors including septic shock, methamphetamine use, trauma, and exogenous vasopressors, made distinction between SICM and TTS difficult in this patient. His global hypokinesis leans toward SICM, since TTS typically presents with apical ballooning, though biventricular variants have been described in severe cases. Cardiac MRI, a valuable tool for tissue characterization and differentiation, was not obtained during the acute phase, limiting definitive classification. The medicine team's eventual label of "stress cardiomyopathy" reflects real-world diagnostic ambiguity and underscores the need for clearer criteria to distinguish these overlapping entities.

10) IT TAKES A VILLAGE: A COMPLICATED COURSE OF TREATMENT FOR MASSIVE METASTATIC TERATOMA

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Clinical Vignette

Introduction: Testicular teratoma is a rare subtype of testicular germ cell tumor that requires prompt surgical management because of its potential for metastatic spread and resistance to chemotherapy and radiation. A teratoma that metastasizes to the retroperitoneum can result in massively enlarged tumors known as "growing teratoma syndrome." Management of this rare situation frequently requires surgery and complex multidisciplinary care. We present the case of a 29-year-old man with a massive retroperitoneal teratoma who underwent extensive surgical resection followed by complicated postoperative recovery.

Case report: A previously healthy 29-year-old presented with a right upper quadrant mass. Imaging was ordered; however, the patient failed to follow up.

Three months later, the patient presented with increasing abdominal distension, pain, 30-pound weight loss, and failure to thrive. Cross-sectional imaging showed a large multicomponent cystic and solid mass (36 x 22 x 22 cm) occupying most of the abdominopelvic cavity with significant mass effect on the left kidney, abdominal aorta, and bowel. Testicular ultrasound revealed a 6.5 cm right testicular mass, suggesting metastatic testicular cancer. Right orchiectomy confirmed pure teratoma; however, serum tumor markers were elevated, suggesting a mixed non-seminoma germ cell tumor. The patient underwent 4 cycles of BEP chemotherapy with minimal change in the retroperitoneal tumor volume. At this time, urologic oncology recommended retroperitoneal lymph node dissection (RPLND) to excise metastases.

Patient was admitted two weeks before surgery for enteral nutrition, followed by RPLND led by urology with vascular surgery and surgical oncology assistance. Surgery resulted in excision of over 30 cm of retroperitoneal lymph node mass, excision of right spermatic cord remnant, left radical nephrectomy and adrenalectomy, resection of 40 cm of jejunum, resection of ascending and transverse colon, and extensive aortoiliac dissection. Final pathology showed viable mature teratoma. Other mixed germ cell tumor components had evidence of treatment effect and were non-viable.

The patient's recovery was complicated by chyle leak, infection and prolonged hospitalization. The patient was discharged to a skilled nursing facility after a 42-day hospitalization. The patient stayed at the nursing facility for 3 months and was discharged in good condition. The patient is currently alive without evidence of disease one year after surgery.

Discussion: This case illustrates the significant morbidity associated with advanced metastatic testicular teratoma. Several points can be gleaned from this case. First, testicular self-examination is important for the early identification of testicular cancer. Second, growing teratoma syndrome can go unrecognized for long periods of time, given that it is frequently asymptomatic until advanced stages. Awareness of this condition is critical for early identification. Third, surgical intervention is the only effective management, as teratoma is resistant to chemotherapy and radiation. Finally, massive retroperitoneal teratomas require complex management with multiple surgical specialists experienced with caring for these patients. Even in experienced centers, these surgeries can be highly complex, and the postoperative course can be challenging for patients. Postoperative care requires input not only from surgeons but also from multiple supporting teams. Despite the complex course of treatment over eight months, the patient ultimately achieved clinical recovery.

11) THE FLEXIBLE PRESENTATION OF PULMONARY EMBOLISM IN A TRACHEOSTOMY DEPENDENT PATIENT

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Clinical Vignette

Introduction: Acute pulmonary embolism (PE) is a life-threatening condition in which maintaining high suspicion is critical to not miss relevant cases. Initial evaluation includes a history and examination, chest radiography, EKG, and POCUS (with or without DVT assessment), followed by risk stratification using the Wells criteria and biomarkers such as D-dimer, NT-proBNP, and troponin levels to determine the need for further imaging. However, patients with complex baseline pulmonary disease may not fit established diagnostic algorithms, making clinical decision-making challenging. Nearly one-third of patients (even with a large PE) have mild symptoms or are asymptomatic. We present a case of a middle-aged female with chronic respiratory failure requiring nocturnal mechanical ventilation via tracheostomy after a TBI who presented with atypical symptoms. These findings gave her a Wells score of 1.5-2.5 (tachycardia and hemoptysis) depending on the time of classification, placing her in the low-moderate risk group.

Case Description: A 36-year-old woman with a remote history of motor vehicle collision resulting in TBI, hemothorax, diaphragmatic paralysis requiring plication, and chronic tracheostomy presented with persistent shortness of breath, scant orange-red tracheostomy output, and intermittent chest pain. Given her chronic tracheostomy, bronchiectasis, subjective fevers, and imaging abnormalities, an infectious or airway-related etiology was initially considered more likely than PE.

She reported dyspnea at rest and with exertion, while her chest pain had no discernable association with position, exertion, eating, or respiration. She reported subjective fevers without a documented fever. She denied calf pain, unilateral leg swelling, recent prolonged immobility, recent surgery, prior venous thromboembolism, malignancy, and combined oral contraceptive use.

Upon presentation to the ED, the patient was afebrile, normotensive with increased work of breathing on 2L NC and intermittent tachycardia. Initial work-up was notable for chronic normocytic anemia (stable near baseline) and a D-dimer of 0.51. CXR demonstrated hazy left-sided retrocardiac opacities consistent with prior imaging. EKG demonstrated normal sinus rhythm with right-axis deviation. Respiratory pathogen panel and MRSA PCR were negative, and transthoracic echocardiography was unremarkable.

Given dyspnea out of proportion for what would be expected with URI/mucus plugging, CT pulmonary angiography was ordered and demonstrated a nonocclusive PE within the left main pulmonary artery extending into the left lower lobar pulmonary artery with extension into the segmental and subsegmental branches. Significant left upper and lower lobe mucus plugging, cystic bronchiectasis, consolidation, and near-complete collapse of the left lower lobe secondary to mucus plugging were also identified.

Discussion: This case highlights the importance of maintaining a high index of suspicion when evaluating patients with complex respiratory physiology. Our patient's Wells score of 1.5–2.5 and D-dimer of 0.51 μg/mL narrowly met criteria for CT pulmonary angiography. Had her D-dimer fallen below the diagnostic threshold, established clinical pathways would have supported exclusion of PE without further imaging despite the presence of a clinically significant embolus. Although the Wells criteria are valuable for risk stratification, patients with complex pulmonary pathologies may present atypically, making clinical assessment more challenging. Any deviation from baseline respiratory status should prompt consideration of PE, even when the clinical picture appears only low-moderately suspicious.

12) IMPACT OF A RISK-STRATIFIED CLINICAL PRACTICE GUIDELINE ON ANTIBIOTIC USE AND HOSPITAL LENGTH OF STAY IN PEDIATRIC FEBRILE NEUTROPENIA

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Quality Improvement / Patient Safety / High-value Care / Physician Well-being & Professional Fulfillment

Background: Febrile neutropenia (F&N) is an oncologic emergency which prompts empiric broad-spectrum antibiotics are critical to reduce morbidity and mortality. However, prolonged antibiotic exposure may contribute to antimicrobial resistance, adverse effects, and longer hospitalization than necessary. In April 2025, Children's Wisconsin (CW) implemented a risk-stratified clinical practice guideline (CPG) to optimize antibiotic use while maintaining patient safety.

F&N is characterized by fever in conjunction with an absolute neutrophil count of <500/uL. Cefepime, with antipseudomonal coverage, has been the standard first-line therapy at CW for pediatric cancer patients with F&N. Recent literature supports a risk-stratified approach that safely reduces unnecessary antibiotic exposure by identifying patients at low risk for complications who may be eligible for antibiotic de-escalation or discontinuation. The CW CPG stratifies patients based on clinical stability, blood culture results, severity of neutropenia, comorbidities, and underlying cancer diagnosis to guide antibiotic management and reduce unnecessary antibiotic exposure, diagnostic workups, and hospital length of stay.

Methods: A multidisciplinary task force developed and implemented the standardized F&N CPG. A total of 538 pediatric cancer patients presenting with fever of ≥38.0°C and severe neutropenia were analyzed. Hemodynamically unstable patients were excluded. Patients were classified into high- and low-risk groups using predefined clinical criteria embedded in the Epic clinical decision support order set, guiding empiric antibiotic therapy and de-escalation. A total of 538 F&N encounters were analyzed. Outcomes included cefepime therapy duration, hospital length of stay, readmission rate on antibiotics within 7 days of F&N discharge, and meropenem use. Continuous variables were compared using Student's t-test or Mann–Whitney U test, and categorical variables using the chi-square or Fisher's exact test ($p<0.05$).

Results: Following implementation of the clinical practice guideline, the quarterly proportion of febrile neutropenia encounters requiring cefepime for >8 days decreased from 27.3% in the initial quarter to 10.3% by the final complete quarter. Median hospital length of stay also decreased from 186 to 130.5 hours, with no observed increase in 7-day readmissions or meropenem use.

Conclusion: Implementation of F&N CPG was associated with reduced prolonged cefepime use and shorter hospital stays without evidence of increased readmissions or escalation to meropenem therapy. These findings support the safety of a risk-based approach to antibiotic management in pediatric oncology patients. Continued monitoring with additional patients and longer follow-up is needed to confirm these findings. Future analyses will evaluate the potential cost savings associated with reduced antibiotic exposure and shorter hospital stays.

13) SECONDARY HEMOPHAGOCYTIC LYMPHOHISTIOCYTOSIS/ MACROPHAGE ACTIVATION SYNDROME ARISING IN A PATIENT WITH FELTY SYNDROME

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Clinical Vignette

Introduction: Hemophagocytic lymphohistiocytosis (HLH) and macrophage activation syndrome (MAS) are potentially fatal hyperinflammatory syndromes that are often triggered by and present similarly to infection, malignancy, and autoimmune disease. Prompt recognition and appropriate diagnostic evaluation are essential for timely diagnosis and treatment. We present a case of secondary HLH/MAS in a patient with Felty syndrome, in whom diagnosis was particularly challenging because baseline neutropenia and splenomegaly overlapped substantially with features of HLH.

Case Presentation: A 60-year-old man with rheumatoid arthritis and longstanding Felty syndrome complicated by chronic pancytopenia and splenomegaly, with multiple prior admissions in the preceding year for neutropenic fever, sepsis, and septic shock, was transferred to a tertiary care center for evaluation of worsening pancytopenia following a prolonged (>30 day) hospitalization for presumed septic shock with encephalopathy requiring vasopressor support and treatment with broad spectrum antimicrobials. Despite an extensive infectious evaluation, including blood and urine cultures, stool studies, and extended respiratory pathogen panel, tick-borne pathogen testing, MRI brain, and CT neck/chest/abdomen/pelvis, no infectious source was identified, prompting transfer for further diagnostic evaluation. CT chest, abdomen, and pelvis demonstrated splenomegaly measuring 22cm, increased from 19cm three weeks earlier, raising concern for an underlying lymphoproliferative process.

On transfer, the patient was hemodynamically stable and afebrile. Laboratory evaluation demonstrated profound pancytopenia (white blood cell count 0.4x109/L, absolute neutrophil count 0.12 x 109/L, hemoglobin 8.1 g/dL, platelets 24 x 109/L), hyperferritinemia (26,949 ng/mL), hypofibrinogenemia (65 mg/dL), hypertriglyceridemia, transaminitis, hyperbilirubinemia, and elevated soluble interleukin-2 receptor levels (7,334 U/mL). The patient's HScore was 218, corresponding to a 93-96% probability of HLH. Collectively, these findings fulfilled 5 of 7 HLH-2024 diagnostic criteria, prompting initiation of dexamethasone per the HLH-94 protocol while awaiting confirmatory bone marrow biopsy results. Biopsy subsequently revealed hypercellular trilineage hematopoiesis with rare hemophagocytic histiocytes and no evidence of hematologic malignancy, large granular lymphocytic leukemia, or viral inclusions. Epstein-Barr virus and cytomegalovirus testing were negative. Within four days of dexamethasone initiation, ferritin progressively declined to 4,484 ng/mL with concomitant improvement in thrombocytopenia, further supporting the diagnosis. A total of 8 mg/kg of anakinra was subsequently administered in the setting of concomitant rheumatoid arthritis, and the patient was discharged on a dexamethasone taper.

Discussion: This case highlights the diagnostic challenge of recognizing secondary HLH/MAS in patients with Felty syndrome, where chronic cytopenias and splenomegaly may obscure the diagnosis of a superimposed hyperinflammatory syndrome. Reports of HLH/MAS occurring in the setting of Felty syndrome remain limited, and the substantial overlap between infection, lymphoproliferative disorders, and baseline manifestations of Felty syndrome can delay recognition.

This case underscores the importance of broadening the differential diagnosis to include HLH/MAS in patients with Felty syndrome who have an unrevealing infectious workup and develop worsening cytopenias, splenomegaly, hyperferritinemia, hypofibrinogenemia, and hepatic dysfunction, even in the absence of fever. Early recognition and treatment are critical to improving outcomes in this diagnostically challenging population.

14) ATYPICAL GUILLAIN-BARRÉ SYNDROME: A RETROSPECTIVE CHARACTERIZATION OF THE DIAGNOSTIC TIMELINE, MISDIAGNOSIS PATTERNS, AND TREATMENT OUTCOMES

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Research (Basic or Clinical)

Background: Guillain-Barré Syndrome (GBS) encompasses a spectrum of immune-mediated neuropathies, including atypical variants such as Miller Fisher Syndrome, pharyngeal-cervical-brachial variant, paraparetic GBS, and pure sensory GBS. These presentations frequently deviate from the common presentations associated with GBS, which lead to misdiagnoses including stroke, myasthenia gravis, or transverse myelitis. These occurrences lead to both diagnostic and therapeutic delay, for which intravenous immunoglobulin (IVIg) and plasmapheresis, the gold standard, are considered most effective when initiated early. However, a diagnostic timeline and true misdiagnosis analysis have yet to be fully characterized in the literature.

Objectives: Characterize the full diagnostic and treatment timeline in atypical GBS, identify misdiagnosis patterns and associated inappropriate treatments, and examine the relationship between diagnostic delay and clinical outcomes.

Methods: We will perform a retrospective chart review of approximately 200 patients identified at Froedtert Health over the past three years using a TriNetX ICD-10 query (G61.0). Because administrative coding does not distinguish GBS variants, all records will undergo manual chart review to confirm diagnosis and classify subtype. For each patient, we will reconstruct a six-point clinical timeline: symptom onset (T0), first medical contact (T1), confirmed diagnosis (T2), treatment initiation (T3), neurologic recovery (T4), and last follow-up (T5). We will document all alternative diagnoses considered before the correct diagnosis, the workup performed for each, and any inappropriate treatments administered. Statistical analysis will identify predictors of total diagnostic delay (T0−T3), characterize time-to-treatment delays, and assess the qualitative burden of misdiagnoses.

Expected Results: We anticipate that atypical GBS variants will show a significantly longer interval from symptom onset to treatment initiation than classic GBS, with higher rates of misdiagnosis and significantly greater administration of inappropriate therapies. We expect these delays to correlate with worse short-term clinical outcomes.

Conclusion: This study will generate the first systematic characterization of the diagnostic timeline in atypical GBS, creating an opportunity for data to inform clinical education, restructure protocols, and offer alternative approaches to unclear neurologic conditions.

15) BEYOND PES CAVUS: HIP DYSPLASIA AS A MANIFESTATION OF CHARCOT-MARIE-TOOTH DISEASE TYPE 1A

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Clinical Vignette

Introduction: Charcot-Marie-Tooth disease (CMT) type 1A is the most common inherited peripheral neuropathy, classically recognized for pes cavus, areflexia, and distal weakness. Hip dysplasia is an underappreciated manifestation of CMT, affecting 10% to 28% of children with the disease, but it is more severe than typical developmental dysplasia of the hip and carries a higher complication rate. We describe a patient with CMT1A who underwent staged bilateral hip preservation surgery, highlighting the medical complexity of this population and the multidisciplinary considerations relevant to internists.

Case Presentation: A male patient first presented at age 11 with bilateral foot pain and progressive pes cavus and underwent bilateral Achilles tendon lengthening. Neurologic evaluation revealed areflexia and sensory changes, and genetic testing confirmed CMT1A via a pathogenic PMP22 duplication. By age 12, radiographs demonstrated bilateral acetabular dysplasia with femoral head subluxation, and at age 14, severe dysplasia was confirmed (lateral center-edge angle −10° right, 4° left; normal ≥25°) with bilateral labral tears on MRI. Staged bilateral hip preservation surgery was planned.

The patient underwent right periacetabular osteotomy (PAO) with hip arthroscopy at age 14. Recovery was uncomplicated until 7.5 months postoperatively, when femoral head subluxation developed and prompted an unplanned right varus femoral osteotomy, a complication attributed to CMT-related hip abductor insufficiency. The left hip was addressed at age 15 with combined PAO, arthroscopy, and varus osteotomy. Across four procedures over 14 months, several medical management challenges emerged.

Iron deficiency anemia (hemoglobin nadir 10.2 g/dL) and vitamin D insufficiency (25-OH 24 ng/mL) were identified preoperatively and treated with supplementation; bone was nonetheless noted to be "quite soft" intraoperatively. Severe postoperative nausea and vomiting (PONV) after the first general anesthetic prompted a switch to total intravenous anesthesia for subsequent procedures, with fascia iliaca blocks used for analgesia; succinylcholine and non-depolarizing neuromuscular blockers were avoided per CMT guidelines. Aspirin was used for DVT prophylaxis given prolonged restricted weight-bearing, and short-course indomethacin with famotidine was used for heterotopic ossification prophylaxis.

Rehabilitation was limited by baseline neuromuscular weakness, with persistent Trendelenburg gait, hip abduction strength of 2−/5 to 3/5, and rehabilitation potential rated "fair." Notably, the patient repeatedly exceeded weight-bearing restrictions, including walking without crutches and playing floor hockey, resulting in an emergency department visit. At most recent follow-up, osteotomy sites were healing with stable alignment.

Discussion: CMT-associated hip dysplasia is neuromuscular in origin, more severe than DDH, and carries a PAO complication rate of 33% versus 13%. This case demonstrates that internists play a critical role in perioperatively optimizing these patients, including managing anemia and nutritional deficiencies that impair bone healing, coordinating anesthetic planning to avoid neurotoxic agents and mitigate PONV, and recognizing that prolonged, restricted-mobility rehabilitation carries ongoing risk of deconditioning, DVT, and psychosocial distress. Clinicians should consider CMT in patients with unexplained hip dysplasia, particularly with concurrent pes cavus, neuropathy, or a family history of peripheral neuropathy.

16) TRANSFORMING PRIMARY CARE ACCESS: OPERATIONAL OUTCOMES AND STAKEHOLDER PERSPECTIVES ON A SYSTEM-WIDE PRACTICE REDESIGN AT AN FQHC IN MILWAUKEE

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Quality Improvement / Patient Safety / High-value Care / Physician Well-being & Professional Fulfillment

Introduction: A federally qualified health center (FQHC) in Milwaukee launched a system-wide primary care practice redesign to address critical challenges in access, quality, and patient and staff experience. Prior to the intervention, the third next available appointment wait time was 48 days and the no-show rate was 27%. To improve these metrics, the FQHC launched the Dramatic Performance Improvement (DPI) initiative, which involved four operational redesign elements: simplified scheduling, robust confirmation workflows, daily huddles, and real-time appointment jockeying. This study examined both operational outcomes and stakeholder perspectives on implementation.

Methods: To address operational inefficiencies and improve both patient and staff experiences, an internal DPI team was formed, consisting of cross-functional staff from clinical, administrative, and support departments. Over a 12-week period, the pilot team tested and refined the four operational redesign elements. Each redesign element was introduced through iterative testing cycles, supported by regular feedback and data monitoring to ensure changes were sustainable and aligned with the goal of improving patient care, staff well-being, and clinic efficiency. After the 12-week period, the redesign elements were rolled out to the entire organization. Approximately one year after implementation, semi-structured interviews were conducted with stakeholders across three organizational levels: senior leadership, mid-level management, and frontline staff and clinical providers. Data were coded and analyzed using thematic analysis.

Results: DPI produced substantial improvements in patient access, clinic efficiency, and overall care delivery within the first 12-week pilot period. The third next available appointment reduced from 48 days to 24 days, resulting in a 50% improvement in appointment availability. The no-show rate decreased from 27% to 12%, reflecting more reliable appointment attendance and improved patient engagement. Patients seen per hour increased from 1.2 to 1.95, cycle time improved from 69 to 54 minutes, and missed opportunities were reduced from 6 to 1.87 per day, with no change to the average time with the physician. One year after rollout to all teams, the no-show rate decreased to 22.6%, patients seen per hour remained at 1.9, cycle time improved to 47 minutes, and missed opportunities reduced to 4.2 per day. While these represent sustained gains over baseline, metrics did not reach pilot-period levels. The semi-structured interviews with stakeholders revealed three major themes: lack of accountability across all organizational levels, staffing levels and high turnover rates as significant barriers to consistent implementation, and partial efficiency gains even where full adoption fell short.

Conclusion: The initial 12-week pilot results of the DPI initiative highlight the powerful impact of intentional workflow redesign on access, efficiency, and patient engagement. However, sustainability of these improvements proved challenging, due to limited adoption of key redesign elements across the organization in the year following the pilot. The semi-structured interviews revealed that limited adoption stemmed primarily from lack of accountability across organizational levels and high staff turnover rates. When implementing a system-wide practice redesign, it is vital for senior leadership to ensure adequate staffing and clear accountability structures across all leadership levels.

17) PROGRESSION OF GIANT-CELL ARTERITIS – FROM CLINICAL PRESENTATION TO TREATMENT

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Clinical Vignette

INTRODUCTION: Giant cell arteritis (GCA) is the most common form of vasculitis in adults, affecting women three-times more frequently than their male counterpart. The annual incidence of GCA is reported to be 18.9/100,000 cases. Over 80% of cases occur after age 70, with the highest risk for development being advanced age. Symptom onset can be subacute though more rapid disease progression can occur. One estimate indicates that only 15% of GCA cases are associated with constitutional symptoms and laboratory findings being the only indication of an initial diagnosis. The following is a case outlined by such presentation in a female younger than the average age of onset.

CASE: The patient is a 69-year-old female who had initially presented in August 2025 with headaches consistent with occipital neuralgia or possible rebound headaches given high dose of over-the-counter medications. Prednisone taper was indicated for treatment which seemed to help. Low-dose nortriptyline was added as a preventative medication following though benefit was not immediately apparent for the patient. Further, she was diagnosed with Lymes disease at this time, making definitive diagnosis and contribution to presentation more challenging to determine.

In early November, she had noticed some changes in her vision, notably the lower half of her right eye. After contacting the clinic, she was sent to the ED for possible indication for imaging. Upon reassessing the history, the patient described more temporal tenderness which prompted ordering of inflammatory markers including ESR and CRP demonstrating significant elevation. Suspecting the possibility of giant cell arteritis, the optometrist was consulted and upon examination the patient had evidence of mild right-sided papilledema. With this data, rheumatology was consulted who then recommended a course of IV methylprednisolone.

Within two weeks, the patient was taken for bilateral temporal artery biopsy by general surgery, with subsequent biopsy results indicating giant cell arteritis on the patient's right side, consistent with vision changes in her right eye. Since the procedure, she has been seen by a rheumatologist for additional treatment guidance.

DISCUSSION: Here we discuss a case study of a patient younger than the average age of onset with a more unusual initial presentation. This is particularly notable as this case was at a rural hospital, outside of a large academic institution. While GCA is the most common form of vasculitis in adults, it remains a relatively uncommon diagnosis. From following this case in clinic through the surgical procedure and follow-up care was made possible from diligent clinical suspicion in addition to highlighting the importance of interdisciplinary attention from various providers as part of her healthcare team.

18) ESTROGEN RECEPTOR SIGNALING MEDIATES SEX-SPECIFIC METABOLIC RESPONSES TO DIETARY PROTEIN RESTRICTION IN MICE

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Research (Basic or Clinical)

Lifetime dietary protein restriction (PR) improves metabolic health and longevity across multiple model organisms. However, female mice show markedly attenuated metabolic responses to PR compared to male counterparts. Previous work demonstrated that ovariectomy sensitizes female mice to PR and shifts their metabolic response towards more male-like phenotypes. These results suggest that ovarian hormones contribute to this sexual dimorphism, but the specific hormone responsible has yet to be established. Our study aims to determine whether estrogen signaling mediates the sex-specific metabolic response to PR. We assigned males, females, and females under the estrogen receptor antagonist fulvestrant to either a normal protein (21%) or protein restricted diet (7%) beginning at 8 weeks of age. Body weight, food intake, and body composition via EchoMRI were assessed longitudinally, and comprehensive metabolic phenotyping was performed. We found that pharmacological inhibition of estrogen signaling allows female mice to respond to protein restriction metabolically. Our study highlights the importance in understanding the interaction between sex-specific hormones and dietary interventions that promote health.

19) BEYOND TYPICAL PATHOGENS: SUTTERELLA WADSWORTHENSIS AS A CAUSE OF BRAIN ABSCESS IN AN IMMUNOCOMPROMISED PATIENT

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Clinical Vignette

Introduction: Sutterella wadsworthensis is an anaerobic, asaccharolytic, gram-negative rod predominantly colonizing the human gastrointestinal mucosa. While identified in intra-abdominal infections, its isolation from extraintestinal sites above the diaphragm is exceedingly rare. We present a unique case of an intracranial infection positive for S. wadsworthensis on culture underlying a chronic scalp wound of an immunocompromised patient.

Case Presentation: A 68-year-old male with past medical history of type 2 diabetes with end-stage renal disease, status post renal transplant in 2009 on chronic immunosuppression, coronary artery disease, and a previously treated squamous cell skin cancer on head with Mohs surgery and radiation in 2016 presented to the emergency department with one week of head pain and photophobia that had progressively gotten worse. Physical exam was unimpressive, including a neuro exam, aside from the finding of a 4x4 cm scalp defect with exposed calvarium. CT head demonstrated evidence of osteomyelitis and subdural fluid collection concerning for empyema. Neurosurgery and plastic surgery were consulted for craniotomy, washout and flap repair. Cultures from the intracranial fluid collection grew S. wadsorthensis and the bone sample grew Actinotignum species, Dermabacter hominis, as well as additional mixed anaerobic flora. The patient was started on vancomycin and meropenem but encountered DRESS syndrome with the vancomycin and was switched to minocycline to complete the six-week course.

Discussion: Sutterella wadsworthensis has rarely been isolated from extraintestinal infections and has not been widely recognized as a cause of intracranial infection. This case demonstrates that chronic scalp defects with exposed bone in immunocompromised patients may permit invasion by uncommon anaerobic organisms, resulting in severe infection with nonspecific symptoms and minimal neurological findings. Recognizing the potential for atypical anaerobic organisms to cause intracranial infection, surgical drainage with operative culture is essential for targeted antimicrobial therapy and relief of mass effect.

20) AEROALLERGEN SEASON TIMING, INTENSITY, AND CLINICALLY RELEVANT EXPOSURE IN MADISON, WISCONSIN

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Research (Basic or Clinical)

Introduction: Climate change is lengthening and intensifying aeroallergen seasons, worsening allergic and respiratory disease. Wisconsin has warmed 2 to 3°F since the 1950s and its pollen season has lengthened by 13 days, contributing to seasonal allergy and asthma symptoms. Season metrics vary by taxon and geography, timing alone does not indicate how often patients are exposed at concentrations that provoke symptoms. No comprehensive local characterization currently exists.

Objective: To characterize aeroallergen season timing, evaluate season intensity, and quantify trends in days of clinically relevant exposure defined by the National Allergy Bureau (NAB) thresholds in Madison, Wisconsin, 1994 to 2025.

Methods: This retrospective analysis used daily counts for trees, grasses, weeds, and molds from the Madison NAB station, 1994 to 2025. Six metrics were derived per season. Onset and end were the first of three consecutive days above or below 1.0 grains per cubic meter, and length was the days between them. Peak was the date of maximum concentration, peak concentration was the value that day, and season concentration was the sum of daily values.

Counts were also classified into NAB exposure categories (moderate begins at trees 15, grass 5, weeds 10 grains per cubic meter; molds 6500 spores per cubic meter). Days at moderate or higher, the lowest level at which sensitized patients react, were tallied annually by taxon and in aggregate. Season metrics and annual exposure days were regressed on year, with significance at $p < 0.05$.

Results: Tree onset shifted 18 days earlier and grass onset 9 days earlier. Weed season end shifted 20 days later, driven by a 38 day delay in ragweed. Season length increased 32 days for trees and 42 for grasses. Peak timing was stable except Alternaria, which peaked 62 days later. Pooled peak ($p = 0.020$) and season concentration ($p = 0.048$) increased, while ragweed declined in both ($p = 0.004$; $p < 0.001$). Ragweed was the most severe individual taxon, high on 58% of days in season. Tree taxa were mainly low to moderate, yet aggregated tree pollen was high on 59% of days and weed on 46%. Days at moderate or higher exposure increased for aggregated weed pollen ($p < 0.001$), remained unchanged for trees ($p = 0.182$) and grass ($p = 0.927$), and declined only for ragweed ($p = 0.007$).

Conclusion: Madison aeroallergen seasons are longer and more intense than three decades ago. Exposure, however, differs by taxon. Patients sensitized to trees and grass face a wider symptomatic window without more days above threshold. Patients sensitized to weeds face more such days, driven by weed taxa other than ragweed, which declined. Since aggregated pollen crosses thresholds more often than individual taxa, forecasts should report both. Local rather than regional pollen dynamics may better guide counseling, treatment, and testing. This study establishes the first long-term Wisconsin baseline linking season dynamics to clinically defined exposure.

21) THE DERMATOLOGIC FACE OF A SYSTEMIC PLASMA CELL DYSCRASIA: CUTANEOUS AMYLOIDOSIS AS A HARBINGER OF MULTIPLE MYELOMA

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Clinical Vignette

Introduction: Systemic light chain (AL) amyloidosis is a clonal plasma cell dyscrasia produced by aberrant production of immunoglobulin light chains which amass in insoluble amyloid fibrils, resulting in significant organ impairment. Any organ can be affected, though the kidneys, heart, and soft tissues are commonly involved. Multiple myeloma (MM) is hematologic malignancy characterized by an unrestrained propagation and prolific infiltration of monoclonal plasma cells in the bone marrow. AL amyloidosis and MM are uniquely intertwined due to their shared cellular origins and cutaneous manifestations. We present a patient who developed rapid-onset desquamation of the eyelids and geometric purpura after removal of medical tape for a cardiac catheterization, and was subsequently diagnosed with MM-associated primary systemic AL amyloidosis.

Case Description: A man in his fifties underwent planned cardiac catheterization with ablation for atrial fibrillation under general anesthesia. The endotracheal tube (ET) and eyelids were secured by medical tape and he received heparin during the procedure. After tape removal, he developed impressive symmetric erosions and purpura involving the eyelids and perioral distribution where the medical tape secured the ET tube. Subsequent examination revealed scattered petechiae and purpura on the trunk and macroglossia. Review of his medical history revealed a previously healthy patient until 1-2 years prior when he developed atrial fibrillation, heart failure with preserved ejection fraction, treatment-refractory hypothyroidism, and bilateral carpal tunnel syndrome.

Differential diagnosis included traumatic purpura, anticoagulation-related purpura, cutaneous amyloidosis, and primary systemic amyloidosis. Given clinical suspicion for an amyloidotic etiology, a telescoping punch biopsy was taken from a petechial lesion within the abdominal fat pad. Laboratory evaluation demonstrated normal serum creatinine at 1.13 mg/dL but urinalysis with 200+ protein. Hemoglobin was 10.8 g/dL. Serum protein electrophoresis revealed significantly elevated gamma globulin to 5.11 g/dL with an M-spike of 4.88 g/dL and kappa/lambda light chain ratio less than 0.01. IgG level was elevated to 5,525 mg/dL, and immunofixation detected a monoclonal IgG lambda protein.

Histopathology showed amorphous eosinophilic material throughout the subcutis, which highlighted with Congo red stain and demonstrated apple-green birefringence under polarized light. Liquid chromatography tandem mass spectrometry confirmed lambda-type amyloid deposition. Bone marrow biopsy demonstrated 58% lambda-restricted plasma cells, confirming plasma cell myeloma. Based on these findings, the patient was diagnosed with MM-associated primary systemic AL amyloidosis.

Discussion: Cutaneous involvement of AL amyloidosis with concomitant MM is associated with a poor prognosis, with most reported cases surviving approximately 6 months. Dermatologic findings may include purpura and so-called ‘pinch purpura’, petechia, ecchymosis, skin fragility, and macroglossia. This case highlights the difficulty of diagnosing AL amyloidosis in its early stages, particularly when cutaneous findings initially appear traumatic or procedure-related. In patients presenting with unexplained skin fragility or purpura, careful evaluation for systemic clues such as restrictive cardiomyopathy, macroglossia, bilateral carpal tunnel syndrome, proteinuria, and monoclonal gammopathy may support earlier diagnosis. Prompt recognition of systemic amyloidosis is critical to prevent irreversible end-organ damage and improve patient outcomes.

22) TURNING THE PAGE ON PAGET DISEASE

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Clinical Vignette

Introduction: Extramammary Paget Disease (EMPD) is a rare cutaneous adenocarcinoma believed to arise in apocrine gland-rich skin, most commonly affecting the vulva, penoscrotal region, and perianal area. It typically presents as a slowly progressive erythematous plaque that mimics inflammatory skin conditions such as eczema, tinea, or candidiasis, often delaying diagnosis by years. Diagnosis requires histopathologic examination with immunohistochemistry, typically showing CK7 positivity with CK20/CDX2 positivity suggesting secondary EMPD. Surgical excision is the standard treatment, while chemotherapy is reserved for metastatic disease. Although EMPD generally carries a favorable prognosis, recurrence rates remain high, particularly in perianal disease, with recurrence often associated with regional or distant metastases.

Case Description: A 75-year-old Caucasian male presented to his primary care physician in June 2023 with painful "jock itch" involving the groin and drainage of white-yellow fluid. Examination revealed a 5 × 5 cm area of erythematous denuded scrotal skin. Dermatologic biopsies of the left groin and scrotum demonstrated EMPD with CK7 and CK20 positivity. Eight months later, he underwent surgical excision of the perianal lesion with colorectal surgery, followed by two re-excisions within nine days because of persistently positive margins. Plastic surgery reconstructed the resulting scrotal and perineal defect using a pedicled left anterolateral thigh flap and pedicled right profunda artery perforator flap. Follow-up five months later showed no evidence of recurrence, but the patient was subsequently lost to follow-up.

Five months later, he returned to his PCP with a painful open wound involving the left groin and scrotum that had persisted for four months with intermittent bleeding. One month later, he presented to the emergency department with worsening erythematous, indurated, draining groin and scrotal lesions consistent with recurrent EMPD. Imaging demonstrated widespread metastatic disease involving the brain, liver, lungs, adrenals, left inguinal soft tissues, lymph nodes, spine, and ribs. CT pulmonary angiography additionally revealed spiculated right upper lobe nodules with surrounding ground-glass opacity concerning for possible primary lung malignancy. Although the primary origin remained uncertain, multidisciplinary discussion favored metastatic EMPD as the most likely etiology. The patient ultimately declined biopsy and palliative chemotherapy at his recent hospitalization. Following goals-of-care discussions, he transitioned to comfort-focused treatment and was discharged to hospice care.

Discussion: EMPD remains diagnostically challenging because of its rarity and resemblance to benign inflammatory or fungal dermatoses. This case highlights the importance of considering biopsy for chronic, treatment-resistant erythematous plaques in the anogenital region to reduce diagnostic delay. It also underscores the aggressive metastatic potential of recurrent EMPD and the importance of close follow-up after surgical treatment. Future work could investigate novel targets to identify implicated cell lines given the uncertainty of the cell of origin. Finally, this case emphasizes the value of multidisciplinary management and patient-centered goals-of-care discussions in advanced disease.

23) EFFECTIVENESS OF TARGETED COMMUNITY OUTREACH IN IMPROVING INTENT TO PARTICIPATE IN CLINICAL TRIALS AMONG UNDERSERVED POPULATIONS

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Research (Basic or Clinical)

Clinical trials are important in advancing disease prevention and treatment development, yet participation is not equitable. While there are multiple barriers, patient-related barriers include limited awareness, medical mistrust, and concerns about experimental treatments, which restrict engagement and contribute to gaps in research representation and access to novel therapies. Community-based educational strategies that are culturally responsive have shown promise in addressing these barriers. This project aimed to increase knowledge and awareness of clinical trials among underserved communities to promote informed decision-making and increase participation in research trials.

We delivered an educational intervention on clinical trials developed by the National Cancer Institute through community health educators (CHE) using flexible formats, including in-person sessions, virtual meetings, group events, or self-guided online participation. Recruitment involved community outreach and participant referral. Participants received a 10-minute educational presentation on clinical trials and completed a pre- and post-intervention survey. Spanish materials and surveys were available to ensure accessibility. Data was collected and managed using REDCap.

104 participants received clinical trial education, with 32/104 (30.8%) Native American, 37/104 (35.6%) African-American, 27/104 (26%) White. Multiracial 3/104 (2.9%) or unknown 4/104 (3.8%) groups were excluded. 65/104 (62.5%) of participants were female and 39/104 (37.5%) male. 83/104 (79.8%) of participants had never participated in a clinical trial. All participants responded to the same surveys and watched the same educational video. 13 participants (12%) completed the intervention online, while 93 participants (87%) received the intervention in an in-person group session, facilitated by a CHE. A total of four sessions were held, two rural and two urban. The median time per session was 50 minutes (range 40-60 minutes). The primary endpoint was the change in participants' understanding of clinical trials and perceptions of research participation following the intervention. Following the intervention, knowledge scores improved in the Rights, Consent & Eligibility domain ($p=0.002$), most notable among White ($p=0.023$) and rural ($p=0.002$) participants. Although knowledge scores did not improve in the Risks, Benefits, & Differences domain, an improvement among White participants was demonstrated ($p=0.025$). Among rural participants, attitudes toward clinical trial participation improved on five of six items, including seeking information ($p=0.044$), searching for a potential trial ($p=0.002$), valuing minority participation ($p=0.002$), likelihood of joining a trial ($p<0.001$), and willingness to discuss trials with family ($p=0.019$); whereas urban participants showed no significant difference. White participants improved in seeking information ($p=0.021$) and searching for an eligible trial ($p=0.005$). Black participants also improved in searching for a potential trial ($p=0.040$). Native American participants showed improvement in valuing minority participation ($p=0.040$) and likelihood of joining a trial ($p=0.021$).

While the intervention improved clinical trial knowledge in the Rights, Consent, & Eligibility domain, highlighting the strengths of the education in this area, its efficacy favored White and rural participants. The intervention also improved attitudes toward clinical trial participation, which notably favored rural participants. While this intervention provided a potentially useful introduction to clinical trials, particularly among rural participants, future efforts could consider moving beyond generalized approaches to incorporate culturally tailored, trust-building educational strategies for urban and minority populations.

24) THE ROLE OF THROMBOELASTOGRAPHY IN CORRECTING COAGULOPATHY IN A BLEEDING CIRRHOTIC PATIENT

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Clinical Vignette

A 41-year-old male with a history of end-stage liver disease due to alcoholic cirrhosis was admitted with confusion, abdominal pain, and abdominal distension. Initial lab results revealed a hemoglobin of 13.3 g/dL, platelets of 184 K/uL, INR of 2.3, bilirubin of 46.8 mg/dL, AST of 66 U/L, alkaline phosphatase of 569 U/L, and creatinine of 2.03 mg/dL. His MELD-NA score on admission was 38. The patient's iron deficiency anemia was investigated with an esophagogastroduodenoscopy (EGD), which showed three columns of large varices with stigmata of recent bleeding in the middle and lower thirds of the esophagus. Three bands were successfully placed resulting in complete eradication and deflation of varices.

A few days after the banding, he suddenly developed generalized abdominal pain followed by large-volume bright red blood per rectum with clots. He quickly became hypotensive with blood pressures in the 50s/30s and became obtunded. A rapid response was called, he was intubated, and a massive transfusion protocol was initiated. Bedside EGD showed bleeding from one of the recently banded varices. A Blakemore tube was placed to tamponade the variceal bleeding and IR was consulted for transjugular intrahepatic portosystemic shunt (TIPS) placement.

His hemoglobin was 4.7 g/dL, platelets were 59 K/uL, and his INR was 3.5. Thromboelastography showed hypocoagulability with a coagulation index of -12.7. Based on the patient's TEG findings, he received 4 units of platelets, 4 units of plasma, and 2 units of cryoprecipitate. He was also resuscitated with 18 units of PRBCs. The patient stabilized after TIPS placement, but had a prolonged and complicated admission and ultimately transitioned to comfort care and died approximately 3 months after his admission date.

This case illustrates the roles of massive transfusion protocols, Blakemore tubes, TIPS placement, and thromboelastography. Massive transfusion protocols are standardized institutional frameworks that rapidly mobilize and deliver blood products in patients with severe, life-threatening hemorrhage. Massive transfusion protocols typically deliver coolers of blood products to the bedside containing pRBCs, fresh frozen plasma, platelets, and cryoprecipitate in prespecified ratios.

Thromboelastography (TEG), unlike conventional coagulation tests (PT and INR) that analyze plasma, evaluates whole-blood cellular components in real-time, offering a comprehensive hemostatic assessment to guide blood product administration. TEG results include the time to start forming clot (R time), the time until the clot reaches a fixed strength (K time), the speed of fibrin accumulation (alpha angle), the platelet number and function (MA) and the percentage of clot lysis 30 minutes after maximum amplitude (LY30). Each parameter has a specific corrective intervention such as fresh frozen plasma, cryoprecipitate, platelets, and tranexamic acid. Using TEG during massive transfusion protocols transform the transfusion from a blind 1:1:1 (PRBC:plasma:platelets) to a goal-directed, individualized resuscitation therapy.

25) PROGRESSIVE RIGHT KNEE PAIN IN A TWO-YEAR-OLD BOY AFTER TREATMENT FOR LYME ARTHRITIS

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Clinical Vignette

Background: Q fever osteomyelitis is a rare zoonotic infection caused by Coxiella burnetii. Because C. burnetii is a fastidious, obligate intracellular organism, diagnosis is frequently delayed. This challenge is compounded in regions where other endemic pathogens, such as Borrelia burgdorferi, can lead to diagnostic anchoring.

Case Presentation: A 2-year-old boy from rural Wisconsin presented with a 10-day history of limp and right knee swelling. He had had an erythema migrans-like rash 3 months previously that self-resolved. Lyme disease serology was positive for IgG and negative for IgM. He was diagnosed with Lyme arthritis and prescribed amoxicillin. His symptoms initially improved, but he developed worsening pain and posterior knee swelling a few weeks later. This was assumed to be a treatment failure, and a second course of amoxicillin was prescribed. Despite two courses of amoxicillin, his symptoms worsened and he refused to bear weight.

MRI of the right knee revealed osteomyelitis of the distal femoral metaphysis with an intraosseous abscess crossing the physis. Operative specimens demonstrated granulomatous inflammation. While routine operative cultures were negative, broad-range 16S rRNA polymerase chain reaction (PCR) identified Coxiella burnetii, which was subsequently confirmed by highly elevated phase 1 IgG titers (1:8192). He was treated with a 2-week course of doxycycline and ciprofloxacin followed by long-term trimethoprim-sulfamethoxazole (TMP-SMX) and rifampin. After 12 months of therapy, he is asymptomatic with significant radiographic improvement.

Conclusions: This case illustrates the danger of diagnostic anchoring when independent infectious processes co-occur or mimic one another in endemic areas. Response to antibiotics in children with Lyme arthritis is usually prompt, and patients are usually asymptomatic by 4 weeks of therapy. Lack of improvement or worsening implies another diagnosis. This case also highlights the utility of 16S rRNA PCR in culture-negative pediatric osteomyelitis, especially when histology suggests the possibility of an unusual organism.

26) MOLECULAR DETECTION OF NAGANISHIA GLOBOSA IN A DESTRUCTIVE PEDIATRIC SELLAR LESION: TRUE INFECTION OR DIAGNOSTIC ARTIFACT?

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Clinical Vignette

Background: Inflammatory sellar lesions frequently mimic neoplasms radiographically and clinically. The increasing use of molecular microbiology can be highly valuable, but it may also present diagnostic challenges when rare organisms are identified. Naganishia spp. are typically environmental yeasts that were formerly classified within the genus Cryptococcus but are now assigned to the family Filobasidiaceae. Reported human infections are rare and opportunistic, occurring mainly in immunocompromised hosts and involving pulmonary or cutaneous disease. An invasive central nervous system involvement is not well-documented.

Methods: A 13-year-old girl presented with panhypopituitarism and a 22-mm expansile intrasellar mass, favored to represent a pituitary macroadenoma or craniopharyngioma. The diagnostic workup included histologic examination along with special and immunohistochemical stains for infectious and neoplastic entities. Molecular microbiologic testing (e.g., broad-range PCR for bacterial, acid-fast bacilli, and fungal organisms) was also performed on paraffin-embedded tissue at a reference laboratory.

Results: Histologic sections revealed dense lymphoplasmacytic inflammation composed of plasma cells, lymphocytes, and histiocytes, with variable fibrosis. Scattered foci of necrosis were present, with adjacent obliteration of anterior pituitary architecture. Immunohistochemistry demonstrated polytypic plasma cells; IgG4 and IgG did not suggest IgG4-related disease. Special stains showed no diagnostic microorganisms, while evaluation for toxoplasma, syphilis, and viral etiologies was negative. No evidence of pituitary neuroendocrine tumor, craniopharyngioma, hematolymphoid neoplasm, was observed. Broad-range fungal PCR with reflex sequencing identified Naganishia globosa with 100% sequence match. Although broad-range PCR can be prone to contamination, this organism is not considered a common laboratory contaminant. In the absence of an alternative etiology, CNS-dosed fluconazole therapy was initiated.

Conclusion: This case highlights the diagnostic challenges of inflammatory sellar lesions and the careful interpretation required when molecular testing identifies an unexpected organism without histologic confirmation. Correlation of the clinical presentation, pathology, and molecular findings was essential in guiding management.

27) THE IMPACT OF SOCIOECONOMIC DISPARITY AS MEASURED BY THE AREA DEPRIVATION INDEX (ADI) ON THE OUTCOMES OF UVEITIC GLAUCOMA

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Research (Basic or Clinical)

Purpose: Socioeconomic disadvantage has been linked to worse outcomes in several forms of glaucoma, but its relationship to uveitic glaucoma remains unclear. This study evaluated the association between neighborhood-level socioeconomic disadvantage as measured by the Area Deprivation Index (ADI and disease severity at presentation in patients with uveitic glaucoma.

Methods: A retrospective chart review was conducted of 65 patients (91 eyes) diagnosed with uveitic glaucoma (ICD-10 H40.40X) evaluated at UW Health ophthalmology and optometry clinics between March 2020-March 2025. Patients were required to have ≥3 visits. Demographic information, ZIP codes, uveitis classification, autoimmune comorbidities, presenting intraocular pressure (IOP), number of IOP-lowering medications, Humphrey Visual Field (HVF) indices (mean deviation [MD], pattern standard deviation [PSD]), and glaucoma procedures were collected. ZIP codes were linked to ADI national rank using the Neighborhood Atlas. Multivariate regression models fit in R controlling for age and inter-eye correlation assessed the association between ADI and glaucoma surgery within 12 months, HVF MD and PSD within 6 months of presentation, presenting IOP, and number of IOP-lowering therapies. Significance was set at $p<0.05$.

Results: Glaucoma procedures were performed in 18.7% (17/91) of eyes within 12 months. ADI rank was not significantly associated with surgical intervention ($p=0.65$), number of IOP-lowering medications ($p=0.70$), or presenting IOP ($p=0.12$). HVF data were available for 37/91 eyes (41%). A nonsignificant trend suggested worse HVF MD in patients from more disadvantaged neighborhoods ($p=0.18$), and no significant association was seen between ADI and PSD ($p=0.58$). Data completeness was limited due to small sample size and incomplete HVF testing.

Conclusions: In this cohort, increasing socioeconomic deprivation showed a trend toward worse visual field mean deviation but no statistically significant association with surgical need, presenting IOP, or baseline therapy burden. The limited availability of visual field testing likely reduced statistical power and barriers to visual field completion should be explored. Larger studies with more complete functional testing data are needed to better delineate whether neighborhood-level socioeconomic disadvantage contributes to disparities in uveitic glaucoma outcomes.

28) IMPROVING BLOOD PRESSURE AND DIABETES OUTCOMES THROUGH CULTURALLY TAILORED EDUCATION FOR REFUGEE AND IMMIGRANT PATIENTS

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Quality Improvement / Patient Safety / High-value Care / Physician Well-being & Professional Fulfillment

Background: Arab American seniors and refugee populations often experience barriers to chronic disease management, including language barriers, limited health literacy, and culturally discordant educational resources. These barriers contribute to poorer chronic disease management and disparities in health outcomes among refugee and immigrant populations. Clinics often lack sustainable and culturally aligned education models for chronic disease management. The Muslim Community & Health Center (MCHC) and Sakina Senior Center serve many Arabic-speaking seniors and refugee patients with chronic conditions such as hypertension and diabetes. We sought to improve chronic disease education using culturally and linguistically tailored interventions.

Methods: A quality improvement initiative was conducted through a partnership between MCHC and the Sakina Senior Center in Milwaukee, Wisconsin. A needs assessment with patients and nursing staff identified barriers to chronic disease management, and a literature review on healthcare interventions for Arabic-speaking older adults and refugee populations informed the intervention design. Three bilingual (Arabic-English) educational workshops focusing on hypertension, diabetes, and physical activity were delivered to Arabic-speaking seniors using culturally appropriate presentations, printed educational materials, and pre/post knowledge surveys. Simultaneously, the clinic expanded culturally tailored patient education for refugee populations through nurse-led education and multilingual educational resources integrated into routine clinical care. Aggregate clinic quality metrics were monitored throughout the project.

Results: Educational workshops demonstrated improvements in participant knowledge and confidence regarding chronic disease management. Knowledge scores increased following all three workshops, with hypertension knowledge improving from 94% to 100%, diabetes knowledge from 80% to 87%, and exercise knowledge from 50% to 70%. Participants also reported greater confidence in managing their health after each session. During the project period, clinic quality metrics improved, blood pressure control (≤140/90 mmHg) improved from 69% to 82%, while the proportion of patients with uncontrolled diabetes (HbA1c above goal) decreased from 28% to 22% during the project period.

Conclusions: Community-based, culturally and linguistically tailored education can improve health knowledge among Arabic-speaking older adults while supporting improvements in clinic quality metrics for underserved populations. Partnerships between community organizations and primary care clinics represent a sustainable approach to addressing health disparities and promoting chronic disease self-management among immigrant and refugee communities.

29) DIFFUSE ALVEOLAR HEMORRHAGE MIMICKING PNEUMOCYSTIS JIROVECII PNEUMONIA IN A PATIENT WITH MULTIPLE MYELOMA

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Clinical Vignette

Introduction: Acute hypoxic respiratory failure is a common reason for admission among patients with hematological malignancies. The differential is broad, including typical and opportunistic infections, fluid overload, and drug-induced lung injury/pneumonitis from anti-neoplastic therapy. Often overlooked, diffuse alveolar hemorrhage (DAH) can mimic these conditions. We present a case in which DAH mimicked Pneumocystis jirovecii pneumonia (PJP) in a patient with multiple myeloma and profound immunosuppression.

Case Presentation: A 77-year-old woman with relapsed/refractory multiple myeloma was admitted for management of hypercalcemia and acute kidney injury in the setting of disease progression while on treatment with teclistamab and daratumumab. After initial stabilization with intravenous fluid resuscitation and dexamethasone, she received high-dose cyclophosphamide on hospital day 2 to stabilize her disease. On hospital day 3, she developed new cough and progressive hypoxemia requiring 4 L supplemental oxygen. She remained afebrile, exhibited diffuse crackles on examination, and denied hemoptysis. Laboratory studies showed severe pancytopenia: WBC 1.7 k/μL, hemoglobin 7.7 g/dL (from 10.7 g/dL on admission), and platelets 14 k/μL (from 24 k/μL). Chest CT demonstrated new diffuse bilateral GGOs. Given her immunosuppression, empiric antibiotics were initiated for suspected hospital-acquired pneumonia, and diuresis was attempted for possible transfusion-associated volume overload; however, hypoxemia persisted. Bronchoscopy with BAL demonstrated increasingly hemorrhagic returns on sequential aliquots, with hemosiderin-laden macrophages, confirming DAH. PJP PCR was negative. Additional studies were notable for elevated beta-D-glucan (130) and a positive aspergillus galactomannan (0.88); her most recent IVIG dose was 11 days prior. She was managed with serial platelet transfusions to target >20 k/μL, with improvement in respiratory status. Corticosteroids and antifibrinolytics were not administered, given clinical improvement with supportive care. She was discharged on hospital day 10 on 0.5 L oxygen with outpatient transfusion support. Posaconazole was initiated given positive fungal biomarkers and continued prophylactically given her neutropenia. Following discharge, her respiratory status improved, and a follow-up chest CT weeks later showed decreased GGO burden, and repeat beta-D-glucan was negative.

Discussion: New GGOs in a hypoxic patient with a recent lapse in PJP prophylaxis appropriately raised concern for opportunistic infection; however, this case illustrates that DAH should not be overlooked as a differential diagnosis of acute hypoxemia, particularly given its high in-hospital mortality of 50-80% in patients with hematologic malignancies. In this patient, severe thrombocytopenia, likely exacerbated by recent cyclophosphamide administration, was a major contributor to bland alveolar hemorrhage. Drug-induced lung injury was also considered, although this more often presents with organizing pneumonia or consolidation patterns on chest CT. Distinguishing DAH from PJP is challenging without definitive BAL, as both may present with fever, dyspnea, and bilateral GGOs; however, PJP in non-HIV immunocompromised patients typically follows a subacute course. Elevated fungal biomarkers, notable confounders in this case, are known to be falsely elevated in the setting of recent IVIG; ultimately, BAL-confirmed DAH better explained her acute respiratory decline than invasive aspergillosis. This case underscores the importance of early BAL to distinguish hemorrhage from opportunistic infection in immunocompromised patients with new pulmonary infiltrates.

30) A RARE CASE OF FULMINANT GRAVES' ORBITOPATHY

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Clinical Vignette

Introduction: Graves' orbitopathy (GO) is an autoimmune eye disease which typically presents as a subacute, progressive sequela of Graves' disease. However, rapidly progressive and fulminant GO is a rare presentation and presents with severe, vision-threatening symptoms. It may present with infectious disease concerns and, due to the high inflammatory nature of the condition and complexity of the ocular region, simultaneous infectious mimicry. These complications coupled with its rare nature can lead to potentially costly difficulties in timely recognition and appropriate treatment.

Case Presentation: A 43-year-old male with a past medical history of Graves' disease (on methimazole) recently diagnosed about 5 months prior to admission and poorly controlled Type 2 diabetes mellitus presented to the hospital with severe and rapidly progressive bilateral orbital edema, conjunctival injection, and blurry vision. The patient began experiencing symptoms over several months prior to admission but began to acutely worsen shortly before presentation over the course of a few days. Physical exam revealed severe proptosis, hemorrhagic chemosis, ophthalmoplegia, and bilateral corneal ulceration. He was afebrile without leukocytosis, yet initial concerns were for orbital cellulitis, suggested by CT of the orbits and seemingly purulent ocular discharge. Further evaluation by primary medicine, otolaryngology, endocrinology, infectious disease, and ophthalmology teams favored diagnosis of Graves' orbitopathy with rapid progression and secondary bacterial keratitis. Due to risk of imminent vision loss, the patient underwent bilateral orbital decompression with tarsorrhaphy. He also received teprotumumab after completing an audiological assessment and high dose IV glucocorticoids before beginning to show gradual improvement.

Discussion: The patient's emergent presentation can be attributed to the interplay of multiple modifiable and non-modifiable patient-specific risk factors, delayed recognition of symptoms, and an unclear duration of symptomatic hyperthyroidism. Consequently, the opportunity for early intervention was missed, resulting in severe disease progression.

Conclusion: This case demonstrates an atypical, rapidly progressive, and severe case of Graves' orbitopathy in a patient with multiple risk factors, where early surgical intervention was necessary in order to preserve vision. It is essential for clinicians to be able to promptly recognize fulminant forms of the disease so they can provide timely multidisciplinary care and, in turn, prevent irreversible vision-threatening complications.

31) NEUROMYELITIS OPTICA SPECTRUM DISORDER MIMICKING GERD: A CASE REPORT

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Clinical Vignette

Introduction: Neuromyelitis optica spectrum disorder (NMOSD) is an inflammatory disorder of the central nervous system characterized by severe, immune-mediated demyelination and axonal damage that predominantly affects the optic nerves and the spinal cord. The early presentation is often non-specific, with symptoms concerning for infectious disease, such as nausea and vomiting or persistent hiccups. As the disease progresses, it can manifest with rapidly sequential optic neuritis, myelitis, or brainstem syndromes. The mimic of gastrointestinal disease often delays diagnosis and timely treatment.

Case Presentation: A 59-year-old male with a past medical history of hyperlipidemia, COPD, and grade B erosive esophagitis presented to the emergency department with the 1-month onset of progressive, intractable nausea, vomiting, and hiccups that occurred primarily at night while in the supine position. His physical examination was notable for bradycardia, and laboratory studies revealed mild leukocytosis. Chest x-ray was unremarkable. Pulmonology was consulted, and he was diagnosed with severe gastroesophageal reflux. He was initiated on Protonix therapy and was advised to sleep in an inclined position until the cough and post-tussive emesis resolved.

A few days later, the patient developed severe orthostatic hypotension and subsequent blurry vision and pain with ocular movements. Physical examination revealed leftward nystagmus without focal weakness. Due to concern for thiamine deficiency and Wernicke encephalopathy, he was administered IV thiamine supplementation yet did not improve.

However, his bilateral blurry vision and pain with extraocular movements worsened, prompting ophthalmology consultation. MRI of the cervical spine revealed patchy enhancements spanning C6-T1, favoring an active demyelinating process. MRI of the orbits demonstrated short segment increased edema and enhancement of the left greater than right anterior optic nerves. Ultimately, anti-aquaporin-4 (AQP4)-immunoglobulin G (IgG) antibodies were detected on serology.

The patient's presentation was deemed consistent with optic neuritis secondary to neuromyelitis optica spectrum disorder. He was treated with IV methylprednisolone 1g daily in addition to completing a seven-day course of plasma exchange (PLEX). He was discharged with oral prednisone 1mg/kg daily in improved condition.

Discussion: Several clinical presentations should raise suspicion for NMOSD, such as an area postrema syndrome that comprises of intractable hiccups or nausea and vomiting, or simultaneously bilateral optic neuritis. If AQP4-IgG is positive, diagnosis also requires that one of the six core clinical characteristics be present. These include optic neuritis, acute myelitis, area postrema syndrome, acute brainstem syndrome, symptomatic narcolepsy with NMOSD-typical diencephalic MRI lesions, or symptomatic cerebral syndrome with NMOSD-typical brain lesions.

If AQP4-IgG are negative or unavailable, diagnosis requires at least the presence of two core clinical characteristics, and at least one must be optic neuritis, acute myelitis with LETM, or area postrema syndrome. Additional MRI requirements, as applicable, must also be met.

An initial treatment with high-dose intravenous methylprednisolone is advised. In patients with severe symptoms or vision loss, therapeutic plasma exchange is recommended. Long-term immunotherapy is recommended in AQP4-IgG positive patients to reduce the risk of relapse. This case highlights the importance of considering persistent nausea and vomiting refractive to antiemetic agents as a red flag symptom for an underlying autoimmune disease.

32) SUBSTANCE USE DISORDER, PSYCHIATRIC ILLNESS, AND SUICIDE RISK AMONG HOSPITALIZED INCARCERATED ADULTS: A RETROSPECTIVE STUDY USING NATIONAL INPATIENT SAMPLE (NIS) DATABASE

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Research (Basic or Clinical)

Background: Hospitalization offers a brief but critical opportunity to provide coordinated care for incarcerated adults, who have high rates of substance use disorder (SUD), psychiatric illness, and suicide-related risk. However, national data comparing psychiatric comorbidity, suicidality, and inpatient outcomes by SUD status in this population remain limited. This notable gap in the literature has prompted this study.

Methods: We conducted a retrospective observational study using the National Inpatient Sample (2016–2021) of adults hospitalized with an ICD-10 code indicating incarceration, stratified by the presence of a secondary substance use disorder (SUD). We examined demographics, hospital characteristics, medical comorbidities, psychiatric diagnoses, suicide-related risk, and inpatient outcomes.

Results: Among 92,715 hospitalized incarcerated adults, 37,515 (40.4%) had SUD. Patients with SUD were younger (40.7 ± 11.4 vs 48.4 ± 13.9 years) and more often female (22.2% vs 12.6%). Suicidal ideation or suicide attempt was substantially higher among patients with SUD (75.4% vs 38.6%; aOR 3.73; $p < 0.001$). Psychiatric diagnoses were more prevalent with SUD, including major depressive disorder (15.9% vs 11.9%; aOR 1.43), schizophrenia-spectrum disorders (54.7% vs 38.2%; aOR 1.61), bipolar disorder (55.5% vs 39.0%; aOR 1.66), anxiety disorders (aOR 2.07), trauma- and stressor-related disorders (aOR 1.90), and personality disorders (aOR 1.63) (all $p < 0.001$). In-hospital mortality and total charges were lower with SUD (1.01% vs 2.47%; $56,556 vs $69,244), while the length of stay was similar (6.41 vs 6.30 days).

Conclusion: In this national inpatient study, substance use disorder was prevalent among hospitalized incarcerated adults and was associated with markedly higher psychiatric comorbidity and suicide-related risk. These findings emphasize the importance of coordinated inpatient strategies that integrate mental health and addiction care to address this high-risk population.

33) SECONDARY TUMORAL CALCINOSIS OF THE SHOULDER IN A PATIENT WITH END-STAGE RENAL DISEASE MIMICKING BURSITIS

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Clinical Vignette

Introduction: Tumoral calcinosis is a rare disorder characterized by periarticular calcium phosphate deposition resulting in lobulated calcified soft-tissue masses. It may occur as a primary familial condition related to abnormalities in phosphate metabolism or as a secondary process associated with chronic kidney disease and end-stage renal disease (ESRD), particularly among patients receiving long-term dialysis. Recognition of its characteristic imaging appearance is essential to avoid misdiagnosis and unnecessary invasive procedures.

Case Presentation: A 51-year-old woman with hypertension, autosomal dominant polycystic kidney disease, and ESRD on hemodialysis presented to the emergency department with acute left shoulder pain after turning in bed. She described a sudden tearing and popping sensation followed by chest discomfort and pain exacerbated by coughing. Her history was notable for chronic bilateral shoulder pain previously attributed to osteoarthritis and presumed subacromial bursitis, for which she had received intermittent corticosteroid injections.

Physical examination demonstrated limited active range of motion of the left shoulder without deformity or evidence of fracture. Computed tomography revealed a lobulated, amorphous calcified soft-tissue mass lateral to the proximal humerus. Magnetic resonance imaging demonstrated corresponding low-signal-intensity periarticular calcifications. These findings were characteristic of tumoral calcinosis. Laboratory studies showed marked hyperphosphatemia (8.7 mg/dL) with normal calcium and parathyroid hormone levels. Further history revealed missed dialysis sessions, contributing to worsening phosphate imbalance.

The patient was admitted, and management focused on correction of the underlying metabolic derangement through improved dialysis adherence, dietary phosphate restriction, and phosphate-binding therapy. Surgical excision was not pursued because treatment of secondary tumoral calcinosis primarily targets the underlying metabolic abnormality, with surgery generally reserved for refractory symptomatic lesions or those causing significant functional impairment.

Discussion: Secondary tumoral calcinosis is an uncommon complication of ESRD resulting from chronic disturbances in phosphate metabolism. It most commonly affects large joints, including the shoulders, hips, and elbows. Although lesions may be asymptomatic, they can cause pain and functional limitation or present acutely, mimicking more common musculoskeletal conditions. In this case, the patient's chronic shoulder symptoms had previously been attributed to osteoarthritis and presumed bursitis, while characteristic imaging findings ultimately revealed the underlying metabolic etiology. Recognition of these findings enabled diagnosis without biopsy and helped distinguish the lesion from neoplasm, infection, and other causes of soft-tissue calcification.

Conclusion: Secondary tumoral calcinosis should be considered in patients with ESRD who present with periarticular pain or calcified soft-tissue masses, particularly in the setting of hyperphosphatemia. Recognition of its distinctive imaging features can facilitate prompt diagnosis, prevent unnecessary invasive procedures, and direct management toward correction of the underlying metabolic derangement.

34) CANCELLATION OF PLANNED CATHETER ABLATION FOLLOWING SPONTANEOUS REMISSION OF HIGH-BURDEN PAROXYSMAL ATRIAL FIBRILLATION AFTER LEFT ATRIAL APPENDAGE OCCLUSION

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Clinical Vignette

Introduction: Left atrial appendage occlusion (LAAO) mitigates thromboembolic risk in patients with paroxysmal atrial fibrillation (PAF) who cannot tolerate long-term anticoagulation, but it does not alter underlying arrhythmogenesis. Managing highly symptomatic, high-burden PAF after LAAO often forces a choice between escalating pharmacotherapy and invasive ablation. We present a case in which patient-reported wearable data documented a high daily PAF burden that underwent durable spontaneous remission, leading to cancellation of a planned ablation.

Case Presentation: A 73-year-old female with PAF (CHA2DS2-VASc = 3, HAS-BLED = 2) and hypertension, deemed a poor candidate for long-term anticoagulation after a severe upper gastrointestinal bleed, underwent uncomplicated LAAO device deployment, with 45-day TEE confirming complete appendage occlusion.

She subsequently developed escalating symptomatic tachy-brady episodes. Holter monitoring showed a 7.8% AF burden with average rapid ventricular response of 124 bpm. She was maintained on low-dose metoprolol succinate 25 mg daily, declining uptitration given documented sinus bradycardia. Her burden peaked over the following months, with her wearable device recording over 32 symptomatic AF episodes in a single month, occurring almost daily with lightheadedness and near-syncope. Given this burden and a preference to avoid further medication escalation, she elected to pursue pulsed-field ablation, which was scheduled.

While awaiting the procedure, she continued wearable-based monitoring and reporting of episode counts and heart rates at follow-up visits. Around the time of an initial scheduling delay, her daily paroxysms spontaneously and completely resolved. Remission has persisted for over 9 months to date, despite subsequent discontinuation of furosemide and initiation of statin therapy, without recurrence. Given this sustained resolution on her baseline metoprolol dose, she elected not to reschedule ablation; her case request was formally canceled at follow-up, as no longer necessary.

Discussion: This case illustrates that high-burden PAF can undergo substantial, durable spontaneous remission without a clearly identified trigger. Remission has persisted across multiple subsequent regimen changes, arguing against a single simple pharmacologic or physiologic driver and supporting a genuine spontaneous course rather than a treatment effect. Recognizing that PAF burden can fluctuate and resolve unpredictably is important to avoid premature escalation to invasive therapy in patients whose symptoms are trending toward improvement.

Patient-reported wearable data played a meaningful role: she independently tracked and reported episode counts and heart rates across multiple visits, giving her care team objective, longitudinal evidence of both her initial high burden and subsequent remission. This informed the shared decision to cancel a previously planned ablation once it was no longer necessary, highlighting how patient-generated wearable data can supplement standard monitoring and support shared decision-making when symptomatic burden changes unexpectedly.

35) IATROGENIC CUSHING SYNDROME WITH EXTENSIVE COMPLICATIONS FROM MULTI-ROUTE CORTICOSTEROID EXPOSURE

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Clinical Vignette

Introduction: Iatrogenic Cushing Syndrome is a widely recognized complication of glucocorticoid exposure and can result from any administration route. Although individual short course corticosteroid therapies are typically considered low risk, exposure from multiple formulations can produce profound hypercortisolism with varied clinical manifestations. Recognition may be delayed as symptoms develop gradually and each complication may be treated in isolation without arriving at a unifying diagnosis.

Case Description: A 63-year-old man was admitted for progressive bilateral hip pain over 9 months, culminating in inability to ambulate. Imaging revealed bilateral avascular necrosis (AVN) of the femoral heads. Radiographs from 9 months prior showed severe osteoarthritis with AVN developing only recently.

Chart review revealed care across multiple settings and providers with large cumulative corticosteroid exposure. Over the preceding 9 months, he received 3 Medrol (methylprednisolone) dose packs (in Urgent Care, Pain Management, and Emergency Department). He reported at least 5 steroid-containing hip injections, though documentation of this was incomplete. He was prescribed a 14-day course of dexamethasone swish-and-spit for "tongue lesion" when thrush failed to respond to nystatin. Clotrimazole-betamethasone cream was prescribed by PCP for persistent diffuse rash, later identified as cutaneous candidiasis by Dermatology and confirmed by KOH testing.

During this time, he was incidentally found to have pulmonary embolism and deep vein thrombosis of right popliteal vein, developed severe hypertriglyceridemia (1584 mg/dL), and worsening glycemic control (A1c 8.1% from 5.9%). He and his family noted body composition changes including facial and abdominal roundness with striae despite recent weight loss.

Laboratory evaluation demonstrated low morning cortisol (3.1 µg/dL) and ACTH (4.6 pg/mL) but preserved adrenal responsiveness on cosyntropin stimulation testing (peak cortisol 14.6 µg/dL at 60 minutes). This constellation of HPA axis suppression, metabolic abnormalities, thromboembolic disease, bilateral AVN, and extensive mucocutaneous candidiasis was attributed to iatrogenic Cushing Syndrome from his various multi-route glucocorticoid exposures. As only topical steroids were used in recent weeks and adrenals did respond to stimulation testing, hydrocortisone replacement was not felt indicated. All exogenous steroids were stopped. He was discharged with follow-up with Endocrinology, Hematology, and Primary Care.

Discussion: This case illustrates how the continued disorganized prescribing of corticosteroids across fragmented care settings can lead to and exacerbate multisystem complications. AVN is a known complication of intra-articular hip injections and systemic therapy. For this patient, AVN developed only after repeated steroid exposure, and delay in recognition resulted in a cycle of repeated steroid exposure and worsening symptoms. VTE is also a well-documented complication of steroid exposure. Finally, his mucocutaneous candidiasis was treated with dexamethasone swish and spit and high-potency topical corticosteroid, worsening the infection, and further increasing systemic absorption. Due to these complications (particularly VTE and hyperglycemia), definitive treatment with hip replacement was significantly delayed.

A thorough medication history that includes all formulations of corticosteroids is essential when evaluating patients with cushingoid features and multisystem disease. Recognition of total corticosteroid burden is crucial to facilitate earlier diagnosis and limit preventable complications. This case also emphasizes the need for corticosteroid stewardship across care settings and prescribers.

36) AN ATYPICAL CASE OF POST-TRANSPLANT TOXOPLASMOSIS OF UNCERTAIN ORIGIN: A CASE REPORT

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Clinical Vignette

Introduction: Toxoplasmosis is caused by the intracellular protozoan parasite, Toxoplasma gondii, with notably different presentations based on the immune status of the host. The presentation is often asymptomatic in immunocompetent individuals but can present as an acute systemic illness with nonspecific findings, including constitutional symptoms and bilateral, symmetrical nontender cervical adenopathy. Among the immunocompromised, however, toxoplasmic encephalitis is the typical presentation, characterized by multiple ring-enhancing lesions on neuroimaging.

Case Presentation: A 70-year-old female with a past medical history of ischemic cardiomyopathy, hypertension, and type 2 diabetes mellitus, four years status post heart transplant on maintenance immunosuppression with sirolimus and mycophenolate, presented to the emergency department with a one-week onset of nausea, vomiting, diarrhea, chills, and abdominal pain. Initial workup was notable for thrombocytopenia, hyponatremia, mild transaminitis, mild pancytopenia, and an elevated creatinine of 2.3mg/dL. Abdominal CT revealed a distended gallbladder without active inflammation. Supportive care, including Lactated Ringer's solution, odansetron, calcium carbonate, and acetaminophen, was initiated.

Initially, the combination of prolonged gastrointestinal symptoms with signs of infection raised concern for a broad infectious process, including viral and parasitic etiologies. However, an extensive infectious disease workup, including testing for Listeria, Clostridioides difficile, rotavirus, norovirus, CMV, Cryptosporidium, adenovirus, parvovirus B19, Giardia, Legionella, Streptococcus pneumoniae, Leptospira, tick-borne diseases, blood parasites, cryptococcal antigen, West Nile virus, and an extended respiratory pathogen panel, was entirely negative. She subsequently developed waxing and waning mental status, and the working diagnosis became acute encephalopathic sepsis of unknown origin. Workup for CNS infection was unremarkable.

Infectious disease continued close follow up. Karius plasma microbial cell-free DNA test was obtained and returned positive for Toxoplasma gondii. The patient's heart transplant donor was Toxoplasma IgG positive, whereas the recipient's serologies demonstrated negative IgG, positive IgM, and detectable serum Toxoplasma PCR. The diagnostic picture remained highly complex and atypical for toxoplasmosis, due to the absence of ring-enhancing lesions on brain MRI.

Five days later, the patient's clinical status severely deteriorated with lateralized gaze, extensor posturing, and unresponsiveness, requiring NICU transfer and intubation. High-dose trimethoprim-sulfamethoxazole was initiated due to her profound neurologic decline. Progressive renal decline prompted transition to pyrimethamine, sulfadiazine, and leucovorin.

One week later, she continued to develop new fevers while being treated for possible atypical toxoplasmosis. Labs were notable for detectable CMV nucleic acid amplification testing with a viral load of approximately 3000 IU/ml, and valganciclovir was initiated. Fever and leukocytosis eventually resolved.

The patient remains admitted, receiving targeted antiparasitic monitoring and supportive care.

Discussion: This case underscores that the absence of ring enhancing brain lesions should not exclude the diagnosis of toxoplasmosis in immunocompromised patients. Persistent gastrointestinal symptoms followed by unexplained fever, progressive encephalopathy, and repeatedly negative conventional infectious testing should prompt consideration of atypical toxoplasmosis despite nondiagnostic neuroimaging. Of note, whether the infection was donor derived or due to reactivated latent toxoplasmosis, remained unclear.

Early recognition of these clinical red flags and the use of advanced molecular diagnostics, such as plasma microbial cell free DNA sequencing, may prevent delays in diagnosis and treatment, potentially preventing irreversible neurologic injury.

37) PREGNANCY, POSTPARTUM HEMORRHAGE, AND A SELLAR MASS: A DIAGNOSTIC CHALLENGE IN ACUTE HYPOPITUITARISM

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Clinical Vignette

Introduction: Pregnancy induces physiological enlargement of the pituitary gland through estrogen-mediated lactotroph hyperplasia, increasing susceptibility to both symptomatic expansion of pre-existing sellar lesions and ischemic injury during periods of hemodynamic instability. Although Sheehan syndrome is a well-recognized complication of severe postpartum hemorrhage, distinguishing postpartum hypopituitarism from progression of underlying pituitary pathology may be challenging because of overlapping clinical and biochemical features. We present a patient with a longstanding presumed pituitary macroadenoma whose pregnancy and postpartum course created a diagnostic "perfect storm" culminating in an unexpected pathologic diagnosis.

Case Presentation: A 34-year-old woman with a history of presumed pituitary macroadenoma diagnosed in 2016 after evaluation for amenorrhea, hyperprolactinemia, and hypopituitarism underwent in vitro fertilization resulting in a dichorionic diamniotic twin pregnancy. During pregnancy, she developed progressive left-sided visual loss. Neuro-ophthalmologic evaluation demonstrated a left junctional scotoma consistent with optic chiasm compression, while MRI revealed interval enlargement of a predominantly suprasellar cystic lesion measuring 2.4 cm. Neurosurgical resection was recommended following delivery.

At 30 weeks' gestation, she presented with decreased fetal movement and was diagnosed with pre-eclampsia with severe features complicated by acute kidney injury and transaminitis, requiring emergent cesarean delivery. Her postoperative course was complicated by postpartum hemorrhage requiring transfusion, profound hypothermia, hyponatremia (120 mmol/L), hyperkalemia (7.2 mmol/L), acute kidney injury requiring continuous renal replacement therapy, and biochemical evidence of secondary adrenal insufficiency, prompting initiation of stress-dose glucocorticoids. Computed tomography demonstrated a large sellar-suprasellar mass with compression of the optic chiasm and third ventricle.

Following stabilization, she underwent endoscopic transsphenoidal resection. Histopathology unexpectedly demonstrated a Rathke cleft cyst without evidence of pituitary adenoma or craniopharyngioma. At follow-up, she reported improved vision without headaches and remained on physiologic hydrocortisone and levothyroxine replacement.

Discussion: This case illustrates the diagnostic complexity that arises when pregnancy, obstetric complications, and pre-existing sellar pathology converge. Physiologic pituitary enlargement during pregnancy likely contributed to progressive visual compromise, while severe postpartum hemorrhage and critical illness raised concern for acute postpartum hypopituitarism. However, many manifestations of adrenal insufficiency, postpartum ischemic pituitary injury, and progression of a sellar lesion overlap considerably, making definitive diagnosis difficult during the acute postpartum period.

An additional challenge was the discrepancy between the longstanding presumed diagnosis of pituitary macroadenoma and the ultimate pathological finding of a Rathke cleft cyst, highlighting the limitations of clinical and radiographic characterization alone. Rather than representing a single disease process, this patient's presentation reflected the convergence of multiple interacting endocrine and obstetric conditions. This case emphasizes the importance of multidisciplinary management, maintaining a broad differential diagnosis in postpartum patients with known sellar lesions, and recognizing that definitive pathology may substantially alter the understanding of an otherwise complex clinical course.

38) NORMOTHERMIC REGIONAL PERFUSION ATTENUATES THE PROTECTIVE EFFECT OF HYPOTHERMIC MACHINE PERFUSION ON DELAYED GRAFT FUNCTION IN DCD KIDNEY TRANSPLANTATION

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Research (Basic or Clinical)

Introduction: More than 90,000 people in the US are currently waiting for a kidney transplant1. Thus, improving preservation techniques of organ donation after circulatory death (DCD) has become crucial to addressing organ shortages, improving transplant outcomes, and refining resource allocation. Our study aims to evaluate the additive effects of hypothermic machine perfusion (HMP) on normothermic regional perfusion (NRP).

Methods: Adult DCD kidney-only recipients undergoing pre-transplant dialysis in the Organ Procurement and Transplantation Network registry (2020–2025) were stratified by NRP and HMP. The primary variable studied was delayed graft function (DGF) and statistical analyses were used to account for recipient characteristics. Kaplan-Meier analysis was used to assess death-censored graft survival (DCGS).

Results: In a cohort of 3,502 recipients, the incidence of DGF varied by preservation strategy. In the non-NRP cohort, HMP significantly reduced DGF when compared with static cold storage (44.2% vs 53.8%; p=0.0011). Among kidneys preserved with NRP, DGF rates did not differ significantly regardless of subsequent use of HMP or SCS (26.7% vs 27.0%; p=0.98). Cold ischemia time was associated with increased odds of DGF (OR 1.17 per 6-hour increase; 95% CI 1.09–1.25; $p < 0.001$), as was KDPI (OR 1.11 per 10% increase; 95% CI 1.06–1.17; $p < 0.001$).

Conclusion: The protective effect of HMP is attenuated in kidneys recovered with NRP, supporting a context-dependent approach to DCD preservation. Furthermore, consideration of preservation techniques may allow for improved distribution of resources during procurement if a given center plans on NRP recovery.

References:

1. https://unos.org/news/90000-people-are-waiting-for-a-kidney-heres-one-way-to-get-them-a-kidney-faster/

39) SMALL BOWEL FISTULA IN A 64-YEAR-OLD

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Clinical Vignette

Introduction: Small bowel fistulas are defined as an abnormal connection between two epithelialized surfaces. Fistulas within the gastrointestinal tract most commonly arise as postoperative complications. Inflammatory bowel disease, Crohn's disease in particular, accounts for a large majority of spontaneous GI fistulas. Diverticulitis, malignancy, radiation therapy, and abdominal trauma are also known etiologies. The formation of fistulas is largely driven by mucosal breakdown, intestinal content leakage, localized infection, and formation of abscess, ultimately leading to fistulization. Crohn's disease fistulas have been characterized by epithelial cells that lose adhesion and polarity and subsequently undergo transformation into "transitional cells", displaying migratory and fibroblast-like properties that facilitate tissue invasion. Phlegmons, described as inflammatory masses, and abscesses are often seen in combination with fistulas, particularly when the tract allows for leakage of gastrointestinal contents and flora into the peritoneal space.

Case: 64-year-old African American male with a past medical history of ESRD on MWF HD, CAD s/p PCI, T2DM, latent syphilis, recent blastomycosis pneumonia s/p amphotericin B and currently on voriconazole, and current SSTI of BLE that presented to the ED with weakness. On admission, he endorsed some abdominal tenderness, which improved on repeat examination. EGD and colonoscopy performed one month prior for evaluation of anemia and hematochezia showed no evidence of active inflammatory bowel disease and a normal terminal ileum. During admission, MRI L-spine was obtained to evaluate for spinal pathology in the setting of chronic soft tissue wounds, which revealed R psoas fluid accumulation. CT abdomen and pelvis was obtained to further characterize the collection. Diagnosis of R psoas fluid collection with small bowel fistula and phlegmon vs abscess was made. Laparotomy was performed, confirming a small bowel fistula. A small bowel resection of about eighty centimeters was done, and the specimen was sent to pathology. Presence of a small bowel fistula raised suspicion for Crohn's disease. Gastroenterology IBD service was consulted and shared concern for Crohn's due to fistula and elevated inflammatory markers. The pathology report showed no signs of Crohn's disease. Sections of small bowel on pathology slides demonstrated regions concerning for intracellular organisms. After outside hospital consultation, no definitive intracellular organisms were identified; findings were likely intracellular debris. The outside consultant agreed that no signs of chronic ileitis were present.

Discussion: This case presents an unusual presentation of a small bowel fistula. The exact etiology of this fistula and abscess remains unknown. This patient did not present with common risk factors for fistula formation, as he had no previous abdominal surgery, no inflammatory bowel disease, no history of trauma, and no malignancy identified. Given this patient's complex chronic medical conditions, the exact cause may be difficult to discern. The pathology report demonstrating uncharacterized intracellular debris could be a contributing factor or may represent an incidental finding. In the absence of a clear understanding of this patient's small bowel disease process, the etiology of his fistula may remain undetermined. This patient will likely require multidisciplinary follow-up to monitor for recurrence of small bowel pathology.

40) TO TREAT OR NOT TO TREAT: LYMPHEDEMA MANAGEMENT DURING CELLULITIS-ASSOCIATED SEPSIS IN A PATIENT WITH PRADER–WILLI SYNDROME

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Clinical Vignette

Introduction: Prader-Willi Syndrome (PWS), a developmental genetic disorder, is associated with hyperphagia, obesity, and sleep apneas. Approximately 22% of patients develop lymphedema with disrupted lymphatic drainage beyond impacts from obesity. PWS also impacts the hypothalamus causing impaired GH secretion, hypogonadism, hypothyroidism, and rare central adrenal insufficiency. These patients commonly have type 2 diabetes, further increasing infection risk. While lymphedema is a risk factor for cellulitis and may exacerbate cellulitis symptoms, treatment becomes complicated when patients present with sepsis secondary to cellulitis. In the setting of sepsis, use of diuretics, standard complete decongestive therapy (CDT), and manual lymph drainage (MLD) for lymphedema may lead to longer treatment courses, treatment failure, or decompensation. However, fluid resuscitation for sepsis would exacerbate lymphedema and possibly further complicate cellulitis.

Case Presentation: A young man with PWS and a BMI > 70 presented to the emergency department for evaluation of fever, acute respiratory failure, a large erythematous rash spread across his leg and lower abdomen, and tinea corporis. He was afebrile, normotensive, and tachycardic; labs showed leukocytosis, elevated ESR and CRP. He was admitted for the management of cellulitis complicated by sepsis with cefazolin, tinea corporis was treated with clotrimazole cream, and lymphedema was managed with compression wraps and leg elevation. Wraps were difficult to maintain in place due to his elevated BMI, and leg elevation proved difficult as it resulted in lowering his head, which exacerbated his obesity hypoventilation syndrome. Only 500 cc of IV fluids were given due to his profound lymphedema and nontoxic presentation. After several days, his cellulitis visibly improved and tenderness was better controlled on cefazolin, which was continued throughout his admission. Physical therapy recommended home health PT, which he declined; outpatient follow up with the Lymphedema Clinic was requested. He was at his baseline lower extremity swelling when he was discharged on cefadroxil, and diuretics were deferred due to concern of ongoing subclinical sepsis. Unfortunately, he returned to the ED the next day with profound leg pain, despite the cellulitis rash resolving, as well as worsening hypoxia – though he claimed to feel at his baseline dyspnea. Although diuretics typically are not useful in primary lymphedema, his edema was thought to be a mixed presentation with obesity-related venous hypertension and vasodilation in the setting of infection. Following bumetanide therapy, the patient significantly improved.

Discussion: Treatment of lymphedema in the case of cellulitis-associated sepsis is complicated due to the dependent nature of the two variables. PWS further complicates this as markers for sepsis become unreliable due to patients living in a chronic state of inflammation. Central adrenal insufficiency may also confound sepsis markers, such as inappropriately normal leukocyte counts, and necessitate stress-dose steroids. While CDT and MLD are absolutely contraindicated in the setting of sepsis and cellulitis and should therefore be initiated after complete resolution of symptoms and antibiotics, diuretics may be used after resolution of sepsis in the case of mixed-etiology edema. Otherwise, therapy for primary lymphedema in this setting is limited to compression as tolerated and elevation of extremities.

41) QUALITY IMPROVEMENT AND ANALYSIS FOR CURRENT PRACTICES OF ADMINISTERING IVIG POST CAR-T THERAPY IN PATIENTS WITH AGGRESSIVE LYMPHOMA

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Background: Hypogammaglobulinemia is a common side effect of chimeric antigen receptor T-cell (CAR-T) therapy that can persist for years after initial infusion, sometimes requiring intravenous immunoglobulin (IVIG). Current practice suggests considering IVIG for patients with IgG < 400 mg/dL and a high risk of infections, but treatment is largely up to individual clinician discretion.

Objective: This review aims to identify areas of improvement for current practices of IVIG administration for individuals with aggressive lymphoma who have received CAR-T therapy.

Methods: 104 patients with Diffuse Large B-Cell Lymphoma (DLBCL), Primary mediastinal large B-cell lymphoma (PMBCL), or High-grade B-cell lymphoma (HGBCL) who received CAR-T therapy at UW-Madison Hospital from 2018-2025 were initially included in analysis. Additionally, patients were not pretreated with IVIG nor received additional lymphoma therapy <1 year out from CAR-T therapy. Patients were then separated into those who had one dose or less of IVIG (n=54) and those who had greater than one dose (n=17). Patients' infections were categorized as adverse events (AE) on a scale of 1-5 (5 most severe).

Results: 17 patients received IVIG for either primary prophylaxis (n=5) or after an infection(s) (n=12). Two of those 12 patients had a grade 3 or higher AE after IVIG (16.6%). Of the 54 patients who did not receive >1 dose of IVIG, 10 had a grade 3 or higher AE (18.5%).

Conclusion: There is no notable difference in AE for those who received IVIG and those who did not. We acknowledge that in this retrospective analysis of a small cohort of patients, there can be confounding factors impacting the incidence of infections, including but not limited to neutropenia, number of lines of prior lymphoma treatment, and degree of hypogammaglobulinemia. Further research is needed, but currently, the data neither supports nor opposes giving IVIG to decrease the number of clinically significant infections. Given the risks of IVIG, including infusion reactions, increased cost, and time commitment, careful shared decision-making is needed to make the best choice for patient care.

42) HEALTHCARE EXPERIENCES AND WITHIN-COMMUNITY DISPARITIES AMONG MUSLIM ADULTS IN METROPOLITAN MILWAUKEE: A CROSS-SECTIONAL SURVEY

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Introduction: Muslim Americans experience documented healthcare disparities, yet little is known about how healthcare experiences vary within Muslim communities or how socioeconomic factors intersect with religious identity to shape those experiences. We surveyed Muslim adults in metropolitan Milwaukee to characterize healthcare experiences, identify religion-specific barriers and discrimination, and examine whether these experiences differed by income, insurance status, and primary language.

Methods: We conducted an anonymous cross-sectional survey of Muslim adults (aged ≥18 years) recruited from local mosques and a regional Muslim community conference between 2024 and 2026. The survey assessed demographics, healthcare access, provider-patient interactions (5-point Likert scales), religion-specific barriers, and experiences with discrimination. Descriptive statistics, independent-samples t tests, and Fisher's exact tests were performed, with statistical significance defined as $p < 0.05$.

Results: Fifty-five of 84 surveys were complete and included in the analysis (65.5%). Participants were predominantly female (72.7%) and identified as South Asian or Middle Eastern/North African (85.4%). Mean overall healthcare experience was 7.5/10, and 74.1% reported that religion strongly influenced their healthcare decisions (rating ≥7/10). Although 77.4% agreed that their healthcare providers were open to discussing religious concerns, only 46.3% agreed that providers incorporated their Muslim identity into care planning, suggesting a gap between provider receptivity and faith-informed care. The most commonly reported religion-specific barriers included access to same-gender healthcare staff (50.9%) and Ramadan- or fasting-related considerations (36.4%). Nearly one-third of participants (31.4%) reported experiencing discrimination in healthcare, with race and religion cited equally as the most common perceived reasons. Among participants who wore hijab, 32.0% reported being treated differently because of their head covering. Lower healthcare ratings were significantly associated with public insurance compared with private insurance (5.7 vs. 8.1; $p = 0.001$), annual household income below $50,000 ($p = 0.037$), and speaking a primary language other than English at home ($p = 0.040$).

Conclusions: Muslim adults in metropolitan Milwaukee generally perceived their healthcare providers as receptive but identified a meaningful disconnect between provider openness and the integration of religious considerations into clinical care. Healthcare experiences also differed significantly within the Muslim community, with participants who had public insurance, lower income, and a primary language other than English reporting poorer experiences. These findings suggest that culturally responsive care should account for both religious preferences and socioeconomic differences, recognizing that Muslim communities are not a homogeneous population.

43) NEW-ONSET PRIMARY PSYCHOSIS IN A 60-YEAR-OLD-FEMALE COMPLICATED BY INCIDENTAL STEROID CELL TUMOR AND CHRONIC CEREBRAL INFARCT

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Clinical Vignette

Background: Psychosis in later life has a prevalence of ~20%, making it one of the most common medical conditions affecting the elderly [1, 2]. Primary psychotic disorders can present for the first time in later life, with late-onset schizophrenia (onset after age 40) and very-late-onset schizophrenia-like psychosis (onset after age 60) accounting for approximately 15–25% of schizophrenia cases [3]; however, community prevalence among adults aged 65 and older remains low (0.1–0.5%) [4]. In older adults, secondary causes of psychosis—including medical illness, medications, metabolic disturbances, and structural brain disease—are more common than primary psychiatric disorders, and a thorough diagnostic evaluation is therefore essential before attributing new-onset symptoms to a primary psychotic illness [5].

Case Presentation: A 60-year-old woman without prior psychiatric history presented to the ED with agitation and delusions. Hirsutism on examination led to hormonal testing significant for elevated testosterone and an ovarian mass. Her workup was further complicated by pulmonary embolism, deep vein thrombosis, a remote MCA infarct, and nutritional deficiencies. Extensive evaluation for infectious, autoimmune, and paraneoplastic causes was unrevealing. She underwent oophorectomy for the ovarian mass with surgical pathology identifying a steroid cell tumor. Testosterone normalized postoperatively, but psychosis persisted. She was ultimately diagnosed with late-onset schizophrenia, showed partial improvement on risperidone, and was discharged in stable condition to a psychiatric facility.

Conclusion: This case highlights the challenge of evaluating new-onset psychosis in patients over age 40 when comorbid medical conditions are present. We propose a tiered framework that begins with routine metabolic and toxicologic screening and may extend to brain MRI and autoimmune or infectious testing for new-onset or atypical presentations. Lumbar puncture, EEG, and other targeted studies may be considered when suspicion for a specific secondary etiology persists. Stroke, paraneoplastic syndromes, autoimmune encephalitis, and infection were among the secondary causes explored here, yet incidental findings of hirsutism and an androgen-secreting ovarian tumor risked anchoring the workup prematurely. Psychosis persisted after oophorectomy. On repeat neuroimaging, the cerebral infarct appeared remote, with maturation but no acute changes making this an unlikely explanation of her psychosis. Continuous EEG monitoring showed no seizures or epileptiform discharges, making a seizure-related cause similarly unlikely. Primary late-onset schizophrenia may therefore be considered only after thoughtful secondary evaluation when psychiatric symptoms do not resolve with treatment of comorbid disease.

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44) FROM CHRONIC COUGH TO SEPTIC SHOCK: A CASE OF A MASSIVE LUNG ABSCESS

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Clinical Vignette

Pulmonary abscesses are uncommon complications of pneumonia and may present as mass-like lesions, creating significant diagnostic and therapeutic challenges. Large lung abscesses carry substantial morbidity and may require source control in addition to prolonged antimicrobial therapy. I present a case of a giant pulmonary abscess initially discovered as a presumed lung mass that progressed to septic shock despite broad-spectrum antibiotics.

A 65-year-old man with a past medical history significant for asthma-COPD overlap syndrome, coronary artery disease, chronic tobacco use (>40 pack-years), and chronic opioid use for back pain presented with progressive fatigue, productive cough, and a 50-pound unintentional weight loss over eight months. He also reported intermittent night sweats and worsening dyspnea. On presentation, he was borderline hypotensive and was tachypneic. Laboratory studies revealed normocytic anemia, hypokalemia, and elevated inflammatory markers. Chest radiography demonstrated a large right lower lobe opacity concerning for malignancy, pneumonia, or loculated pleural fluid. Computed tomography of the chest revealed a 14.1 cm rim-enhancing fluid-filled collection in the right lower thorax with associated multifocal consolidative opacities and mediastinal adenopathy, concerning for pulmonary abscess versus empyema.

The patient was admitted and empirically treated with intravenous piperacillin-tazobactam and vancomycin. Given the chronicity of symptoms, extensive infectious evaluation including blood cultures, sputum cultures, acid-fast bacilli, fungal studies, HIV testing, and urine antigens for endemic fungi and atypical pathogens was pursued. Initial management was complicated by uncertainty regarding whether the lesion represented an intraparenchymal abscess or pleural empyema. Due to concern for bronchopleural fistula formation, invasive drainage was initially deferred.

Despite broad-spectrum antimicrobial therapy, the patient clinically deteriorated with development of septic shock requiring vasopressor support. Multidisciplinary discussions among pulmonary critical care, cardiothoracic surgery, and interventional radiology teams concluded that source control was necessary despite procedural risks. Ultrasound-guided placement of a right-sided pigtail chest tube yielded 60 mL of foul-smelling green purulent fluid, followed by continued drainage exceeding one liter over several days. Cultures remained negative, likely due to normal oral flora being aspirated and causing the abscess. Following drainage, the patient's hemodynamic status rapidly improved, vasopressors were discontinued and repeat imaging demonstrated near-complete resolution of the abscess cavity after a few days. Antibiotics were subsequently narrowed to ampicillin-sulbactam for a prolonged treatment course.

This case highlights the importance of considering a pulmonary abscess in patients presenting with chronic constitutional symptoms and mass-like pulmonary lesions, particularly in individuals with poor dentition and recurrent pneumonia. Additionally, it demonstrates that although concerns regarding bronchopleural fistula may complicate management decisions, timely source control can be lifesaving in patients with large pulmonary abscesses who fail medical therapy alone.

45) BURNOUT & JOB SATISFACTION IN WISCONSIN PHYSICIANS

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Quality Improvement / Patient Safety / High-value Care / Physician Well-being & Professional Fulfillment

Introduction: Wisconsin physicians are experiencing burnout at levels surpassing national benchmarks. Burnout is a problem that not only affects physicians, but also their families and patients as well. This project's objective is to analyze the variables that may contribute to an increased level of burnout that surpasses the national average, specifically in the northeast Wisconsin region.

Methods: Surveys were sent to HR managers at three private practice locations in northeast Wisconsin. HR managers distributed the survey link via email to all physicians within their workplace to keep anonymity. The survey was open for one month and all responses partially completed were suppressed. The data was analyzed, examining levels of burnout against various demographic and institutional factors.

Results: It was found that there was a strong correlation between use of the EMR/EHR and frustration. Furthermore, the most reported reasons for burnout include the EMR/EHR, administrative requirements, and patient demands.

Conclusions: The electronic medical record (EMR) has been one of the leading stressors for physicians in recent years. Over 66% of physicians reported agreeing or strongly agreeing that the EMR adds frustration to their day. No statistically significant difference was found in levels of burnout between males and females. There is moderate correlation between the average hours worked and level of burnout. The most reported reasons for burnout are EMR/EHR, administration, and patient care. This is consistent with the results of the previous Wisconsin Medical Society and American Medical Association survey conducted in 2018, reporting the primary causes of physician burnout include interactions with the EHR, lack of supportive practice environment, loss of autonomy, and poor work/life balance. Analysis was limited by a sample size of 30 participants. Future studies could look at what specific aspects of the EMR/EHR cause the greatest burden on physicians and if the new Wisconsin Healthcare Professional Services Program has made a change in the levels of provider burnout.

46) INCIDENTAL INCIDENCE IN THE RADIOLOGIC RENAISSANCE: IMPACT OF INCIDENTAL FINDINGS IN PREOPERATIVE ADVANCED IMAGING FOR SHOULDER ARTHROPLASTY & BEYOND

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Clinical Vignette

Preoperative CT utilization for shoulder arthroplasty has risen over 500% in the past decade, improving component templating and reducing revision rates. However, a dedicated "shoulder" CT inherently captures the entire hemithorax, broadening the incidental finding (IF) burden well beyond the surgical field. IFs affect 45-52% of preoperative arthroplasty CTs, with up to 28% deemed clinically actionable. The first shoulder arthroplasty-specific analysis (n=385), Winzenried et al. (2024) identified IFs in 50% of cases – most pulmonary – with 27-28% warranting further imaging, biopsy, or referral. Critically, without systematic follow-up, fewer than 30% of IFs receive appropriate inpatient triage, and less than half are documented in discharge summaries. This case underscores the role of internists as linchpins in the reliable recognition, communication, and pursuit of IFs alongside surgical and subspecialty colleagues.

A middle-aged man sustained a right proximal humerus fracture in 2011, treated with ORIF. By 2017, an Enterococcal hardware infection with draining sinus necessitated hardware removal, followed by multiple debridements and antibiotic spacer placement. Between 2018 and 2020, he underwent three staged procedures – including humeral head resection and serial spacer exchanges – for chronic osteomyelitis, with cultures persistently positive despite prolonged IV antibiotics. A PICC line placed for antibiotic delivery was complicated by left subclavian DVT requiring anticoagulation. In February 2021, a preoperative CT obtained to plan definitive shoulder arthroplasty incidentally revealed bilateral lung nodules. Subsequent CT chest identified a 55 mm left posterior chest wall mass involving the 11th rib with enlarging pulmonary nodules. Biopsy confirmed extraskeletal myxoid chondrosarcoma (NR4A3 rearrangement-positive). Six cycles of doxorubicin achieved disease stability, and the patient proceeded to shoulder arthroplasty in September 2021 with lifelong oral antibiotic suppression. The subsequent oncologic course was marked by progressive disease, gemcitabine- and sunitinib-related cardiopulmonary toxicity. In 2025, trabectedin, administered with palliative intent, precipitated ICU-level care with hypovolemic shock, drug-induced liver injury, refractory electrolyte derangements, severe malnutrition, and lactic acidosis requiring vasopressors. Following discharge, the patient expressed interest in transitioning toward comfort care.

Showcased are the high-stakes consequences of expanding perioperative imaging: a planning CT ordered to template the glenoid instead revealed chondrosarcoma – the second most common primary bone malignancy – where delayed diagnosis limits limb salvage and survival. Prognosis is grade-dependent, with 10-year survival exceeding 80% at grade I but falling below 30% at grade III. Wide excision with negative margins remains the standard of care. In reality, a preoperative "shoulder" CT is a far more inclusive dataset. Disciplined review beyond the surgical field – including lung parenchyma, mediastinum, and chest wall – is essential. Without structured communication pathways, actionable IFs risk being orphaned between the ordering surgeon, interpreting radiologist, and managing physician. EHR-integrated closed-loop programs, including dedicated finding navigators and automated notification systems, have demonstrated improved follow-up completeness from 14% to 46%. This case calls for a contemporary, collaborative framework: the primary care-internal medicine team is uniquely positioned to close the IF loop – triaging urgency, coordinating histopathologic workup and oncologic referral, and ensuring patient understanding – translating incidental findings into timely, comprehensive care plans.

47) BLASTOMYCOSIS IN THE BRAIN: A CASE REPORT OF ISOLATED CNS BLASTOMYCOSIS IN A PATIENT ON NATALIZUMAB

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Clinical Vignette

Introduction: Blastomycosis is a fungal infection caused by inhalation of Blastomyces gilchristii or Blastomyces dermatitidis, dimorphic organisms endemic to the Ohio and Mississippi River valleys and Great Lakes region, including Wisconsin. Risk factors include residence in or travel to endemic areas, immunocompromised states, and certain biologic therapies. While symptomatic patients most often present with pulmonary disease, 5-10% of immunocompetent patients and as high as 40% of blastomycosis patients with AIDS have CNS (central nervous system) involvement. Isolated CNS disease without pulmonary findings is rare, with limited case reports published, and can be challenging to diagnose given nonspecific neurological symptoms.

Case Presentation: A 52-year-old male with chronic migraines, heterozygous factor V Leiden mutation, atrial septal defect, and Crohn's disease on natalizumab presented with three months of left-sided headaches unrelieved by home migraine medications. An MRI brain was notable for an irregular 2 x 1.5 cm left occipital brain lesion suggestive of a hemorrhagic infarct versus mass. Given these findings and the patient's history of an atrial septal defect and factor V Leiden mutation, he was diagnosed with an ischemic stroke with hemorrhagic conversion and discharged on anticoagulant and statin therapy for secondary stroke prevention. Over the next six weeks, he had worsening left-sided headaches, prompting readmission at which time he also endorsed symptoms including intermittent diplopia, photophobia, and nausea. Repeat MRI brain showed the peripherally enhancing left occipital lobe lesion containing hemorrhagic blood products, now with associated dural thickening and enhancement posterior to the lesion. He subsequently underwent a left craniotomy with mass resection. Pathology revealed broad-based budding yeast on Grocott's Methenamine Silver (GMS) stain, and fungal cultures were positive for Blastomyces dermatitidis. At the time of diagnosis, isolated CNS blastomycosis was supported by the absence of pulmonary findings on CT and a negative urine Blastomyces antigen. He was initiated on liposomal amphotericin B and subsequently transitioned to voriconazole. Natalizumab had been held prior to his hospitalization, and he was subsequently transitioned to vedolizumab–a gut-selective biologic, thereby eliminating the presumed CNS immunosuppressive effect.

Discussion: While natalizumab is associated with other CNS infections (notably PML), to our knowledge this represents the first reported case of CNS blastomycosis associated with natalizumab use. Natalizumab is a monoclonal antibody targeting the α4 subunit of the VLA-4 glycoprotein, preventing migration of lymphocytes and monocytes into the CNS. Natalizumab's selective impairment of CNS immunosurveillance through this mechanism may explain why the patient had CNS disease without other findings of systemic involvement. Blastomycosis is typically acquired via inhalation, and hematogenous dissemination may occur during initial infection. Subsequent spontaneous resolution of pulmonary disease potentially explains isolated CNS presentations. Headache as a presenting symptom is non-specific, and in the absence of classic pulmonary findings, diagnosis of CNS blastomycosis can be challenging as evidenced by the initial misdiagnosis in this case. Diagnostic delay can carry an increased risk of mortality, reported at 18% even with treatment, necessitating that clinicians consider blastomycosis in their differential for brain mass, especially in the setting of biologic therapies that impair CNS immunity.

48) WHEN FACTOR VIII FAILS: A CASE REPORT OF ACQUIRED HEMOPHILIA A

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Clinical Vignette

Introduction: Acquired hemophilia A (AHA) is a severe bleeding disorder characterized by the development of inhibitory autoantibodies against factor VIII, resulting in impaired coagulation and increased risk of hemorrhage. A rare disorder with an estimated incidence of 1.5 per million per year, AHA can be associated with autoimmune conditions, infectious diseases, the post-partum state, and malignancy, although the majority of cases are idiopathic. Diagnosis is often complicated by the absence of a bleeding disorder history, as well as varying clinical presentations ranging from mild to life-threatening bleeding symptoms. Currently, treatment is aimed at hemostasis management alongside elimination of the inhibitor.

Case Presentation: An 80-year-old male presented to the emergency department with 2 days of right arm pain, swelling, and bruising. Lab work was notable for anemia and a prolonged PTT of 64 (reference range: 23–36 sec), despite no known trauma or use of blood-thinning medications. Venous duplex ultrasound of the right upper extremity was completed and showed no evidence of DVT or fluid collection. Given negative sonographic findings, the patient was discharged with a close follow-up with his primary care physician (PCP). He soon presented to his PCP with worsening right arm pain and swelling and concerns of diminished right radial pulse. Right upper extremity CT angiogram revealed a 2.0 x 8.2 x 3.4 cm collection in the forearm suspicious for an intramuscular hematoma, prompting hospitalization during which he developed additional bruising in both legs. Repeat lab work showed persistently elevated PTTs with a peak value of 82 and worsening anemia requiring 2 units of packed red blood cells. Mixing study results—demonstrating incomplete PTT correction following mixing that worsened after incubation—strongly suggested the presence of an inhibitor. As such, the patient was transferred to a tertiary center for continued hematological evaluation, where a diagnosis of acquired hemophilia A was confirmed. Further testing revealed a factor VIII activity level of 1% (reference range: 56–191%) and a Bethesda F8 quantitative assay of 70 BU (reference range: $\leq$ 0.5 BU). Inpatient treatment included porcine factor VIII (Obizur) and oral prednisone for hemostasis management and inhibitor eradication, respectively. The patient achieved clinical improvement as evidenced by improved hemoglobin levels, factor VIII levels above 50%, and no acute signs of bleeding. He was discharged in stable condition on a combination of emicizumab, rituximab, and prednisone.

Discussion: This patient presentation illustrates a rare case of an acquired bleeding disorder. AHA poses a diagnostic challenge because of its low incidence, symptom overlap with other medical conditions, and sophisticated laboratory workup. The initial coagulation studies were overlooked in this case, thus emphasizing the importance of close attention to abnormal coagulation testing. Ultimately, this case highlights the high degree of clinical suspicion needed to make this diagnosis to avoid life-threatening complications, especially in patients without a prior bleeding history or precipitating cause.

49) MEDIASTINAL MYELOID SARCOMA CAUSING PULMONARY VASCULAR AND AIRWAY COMPRESSION: AN UNUSUAL PRESENTATION OF ACUTE MYELOID LEUKEMIA

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Clinical Vignette

Introduction: Mediastinal masses causing compression of critical cardiopulmonary structures present diagnostic and therapeutic challenges. Although imaging may suggest an aggressive primary thoracic malignancy, definitive tissue diagnosis is essential as treatment varies substantially by underlying pathology. Myeloid sarcoma is an extramedullary manifestation of acute myeloid leukemia (AML) that most commonly involves the skin, soft tissue, and bone; mediastinal involvement is rare. We present a case of AML manifesting as an invasive mediastinal myeloid sarcoma causing pulmonary vascular and central airway compression.

Case Presentation: A 66-year-old woman presented with progressive chest pain and dyspnea over several weeks. On presentation, she was tachycardic but otherwise hemodynamically stable. She had no significant past medical history, aside from recent presumed viral pericarditis four months prior. Diagnostic workup included transthoracic echocardiography (TTE), computed tomography (CT) of the chest, and cardiac magnetic resonance imaging (cMRI).

TTE demonstrated preserved biventricular function with external compression of the pulmonary artery, resulting in a peak supravalvular gradient of 36 mmHg and mean gradient of 18 mmHg, with an estimated right ventricular systolic pressure of 49 mmHg. CT of the chest and cMRI revealed a large enhancing mediastinal mass extending from the anterior to posterior mediastinum, encasing the main and left pulmonary arteries and compressing the pulmonary veins, left atrium, and central airways, raising concern for an aggressive primary thoracic malignancy.

Endobronchial ultrasound guided fine-needle aspiration of the mass, performed concurrently with bronchial stenting for malignant airway obstruction, was nondiagnostic. Subsequent CT-guided biopsy was also nondiagnostic and complicated by stent migration requiring removal. Ultimately, cardiothoracic surgery was consulted for a surgical biopsy, which demonstrated myeloid sarcoma. Further oncologic workup included bone marrow biopsy, which demonstrated no evidence of AML, and cerebrospinal fluid cytology and flow cytometry, which demonstrated involvement by AML. The patient was diagnosed with AML with extramedullary involvement (myeloid sarcoma).

The mass was deemed unresectable, and the patient began induction chemotherapy, with plans for radiation therapy. Prior to discharge, repeat TTE showed similar preserved biventricular function, a pulmonary artery systolic pressure of 56 mmHg, peak pulmonic valve gradient of 35 mmHg, and moderate tricuspid regurgitation.

Discussion: Mediastinal myeloid sarcoma is a rare manifestation of AML that can closely mimic a primary thoracic malignancy. This case demonstrates the importance of obtaining a definitive tissue diagnosis before initiating therapy, as management differs depending on the underlying pathology. Progressive pulmonary vascular and airway compression also created challenging management decisions while the diagnosis remained uncertain. Potential temporizing interventions, such as pulmonary artery or pulmonary vein stenting and repeat bronchial stenting, required balancing potential hemodynamic and symptomatic benefit against procedural risk and uncertain durability in an infiltrative malignancy.

This case emphasizes the importance of multidisciplinary collaboration, thoughtful biopsy strategies for mediastinal masses, symptomatic management of fixed cardiopulmonary obstruction, and consideration of myeloid sarcoma in the differential diagnosis of invasive mediastinal masses.

50) EFFECTS OF CHATBOT USAGE ON HOSPITALIZATION AND MORTALITY RATES

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Quality Improvement / Patient Safety / High-value Care / Physician Well-being & Professional Fulfillment

Introduction: Unnecessary hospitalizations and delayed discharges represent a significant burden on the healthcare system, with preventable adult inpatient stays costing approximately $33.7 billion in 2017. These inefficiencies are often driven by faulty organizational management and inadequate discharge planning. Chatbot-based technologies have emerged as a promising intervention to relieve this physical and financial pressure by automating symptom assessment and providing 24/7 access to care guidance without requiring constant clinician availability.

Methods: This narrative review searched PubMed and OVID databases for studies published between December 2010 and December 2024 using terms such as "chatbot," "hospitalization rates," and "telehealth". The review focused on retrospective studies that measured hospitalization rates and mortality as primary outcomes in patients utilizing chatbot technology.

Results: A total of three articles were analyzed, highlighting diverse applications of chatbot technology:

Hospitalization and Mortality: In Brazil, the TeleCOVID-MG system used chatbots for risk stratification, resulting in a significantly lower risk of hospitalization (OR 0.82) for patients with acute respiratory illness compared to those who did not use the service, with no negative impact on mortality.

Hospitalization, Mortality, and Compliance: A COVID-19 Virtual Ward in Singapore utilized chatbots to monitor patient vitals. In the "admission avoidance" cohort, 81% of patients successfully avoided hospitalization. The system saw a 77.7% utilization rate and high patient satisfaction.

Hospitalization, Mortality, and Emergency Department (ED) Visits: A study in Taiwan used a chatbot to collect patient-reported symptoms during chemotherapy for gynecological malignancies. This intervention led to a significant reduction in both ED visits (aIRR 0.27) and unscheduled hospitalizations (aIRR 0.31).

Discussion: Use of chatbots resulted in lower hospitalizations compared to those who did not use the chatbot technology and ED visits were also reduced. It was unclear whether chatbot utilization was useful in significantly affecting mortality.

Summary: Early research suggests that chatbot-based systems can effectively manage hospital workflow and reduce unnecessary admissions in both inpatient and outpatient settings. While current research remains scant, further integration of artificial intelligence and automated solutions may help mitigate the global burden on hospital systems.

51) POTENTIAL BENEFITS OF ARTIFICIAL INTELLIGENCE INTEGRATION WITH ADAPTIVE RADIATION THERAPY

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Quality Improvement / Patient Safety / High-value Care / Physician Well-being & Professional Fulfillment

Introduction: Traditional fractionated radiation therapy (RT) often relies on static baseline imaging, failing to account for dynamic inter-fraction anatomical shifts and evolving tumor biological variations over time. This can result in unintended radiation exposure to surrounding healthy tissues and suboptimal tumor control. While Adaptive Radiation Therapy (ART) offers a pathway to modify treatment vectors, standard manual workflows are labor-intensive and constrained by retrospective data processing. This review synthesizes recent evidence on the integration of artificial intelligence (AI) and deep learning techniques to automate plan optimization, improve tumor control, and minimize radiation-induced toxicities.

Methods: A systematic search of the PubMed, OVID, and Cochrane databases was conducted for peer-reviewed studies published between January 2010 and January 2025 using primary search terms including "AI", "deep learning", and "Adaptive radiation therapy". Eligible publications included prospective and retrospective cohort studies evaluating clinical, dosimetric, or spatial endpoints in oncology patients undergoing AI-assisted ART.

Results: Seven heterogeneous articles were analyzed across various malignancies, including non-small cell lung cancer (NSCLC) and nasopharyngeal carcinoma (NPC). Key dosimetric and clinical findings include the following:

Dose Optimization & Sparing: Deep Reinforcement Learning (DRL) frameworks achieved a 2.01% increase in tumor biological effective dose (BED) while restricting normal tissue exposure to just a 0.49% increase.

Toxicity Reduction: Optimization models incorporating machine learning constraints reduced mean lung dose and V20 parameters by an average of 1.78 Gy and 3.66%, respectively, directly precipitating an average reduction in grade 2+ radiation pneumonitis (RP2+) risk from 95% down to 42%.

Predictive Diagnostics: Bayesian networks using mid-treatment 18F-FDG-PET imaging generated a superior Area Under the Receiver-Operating Characteristic curve (AUROC) of 0.84 for pneumonitis risk discrimination, yielding a 15% reduction in normal tissue complication probability (NTCP) via optimized dose adjustments.

Workflow Efficiency: Advanced decision-support systems (e.g., ARCliDS) corrected 74% of poor clinical outcomes in lung malignancies. Furthermore, AI-empowered multi-step integrated workflows demonstrated a 92.3% first-pass plan optimization success rate in NPC target volumes.

Early Adaptation Triggers: Nonlinear support vector machines and logistic regression modules utilizing cone-beam CT (CBCT) data successfully predicted the necessity for plan adaptations 2.25 fractions earlier than clinical baselines, achieving up to 94.3% sensitivity.

Discussion: Implementing automated decision-support tools, directly embedding machine learning-based toxicity models within the optimization algorithm to minimize uncertainty, using probabilistic Bayesian networks combined with mid-course 18F-FDG-PET scans to predict for rare side effects, and integrating Deep Reinforcement Learning plans to effectively elevate the tumor's biological effective dose (BED) while restricting toxic exposure to the surrounding healthy tissues can develop more precise radiation therapy.

Conclusions: The integration of AI within adaptive radiation therapy frameworks shifts clinical management from fixed population-wide paradigms to fluid, patient-specific optimizations. Automated algorithmic triggers and DRL optimization consistently demonstrate the capacity to preserve critical organs at risk, minimize treatment toxicities, and enhance target coverage accuracy. Future research must focus on expanding the scalability of these predictive models across diverse malignancies to secure fully personalized oncology care.

52) METASTATIC MYXOMA TO THE BRAIN MIMICKING HEMORRHAGIC TRANSFORMATION OF EMBOLIC INFARCTS

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Clinical Vignette

Introduction: Cardiac myxomas are the most common primary cardiac tumors and are a well-recognized cause of systemic embolization. Although ischemic stroke is the most frequent neurologic manifestation, metastatic myxoma to the brain is exceedingly rare, with fewer than 70 cases reported. Diagnosis is particularly challenging because metastatic lesions may mimic more common conditions, including hemorrhagic transformation of embolic infarcts.

Case Presentation: A man in his late sixties with a history of multifocal embolic cerebral infarctions secondary to a left atrial myxoma underwent successful surgical resection of the cardiac tumor. Several months later, he presented with progressive headaches, expressive aphasia, recurrent falls, visual disturbances, and focal neurologic episodes concerning for seizures. Brain MRI demonstrated multiple hemorrhagic intracranial lesions that were initially attributed to hemorrhagic transformation of prior embolic infarcts. Serial imaging, however, revealed progressive enlargement of existing lesions, new hemorrhagic foci involving the temporal, parietal, and occipital lobes, and increasing vasogenic edema. An initial stereotactic biopsy demonstrated only gliosis with hemorrhage and was nondiagnostic. Despite the absence of recurrent intracardiac myxoma on repeat transesophageal echocardiography, persistent clinical and radiographic progression prompted multiple craniotomies. Histopathology confirmed metastatic myxoma to the brain with positive calretinin staining. The patient subsequently underwent fractionated stereotactic radiotherapy followed by stereotactic radiosurgery for newly developed lesions and remains under close radiographic surveillance.

Discussion: This case highlights the diagnostic challenges of metastatic myxoma to the brain following resection of a left atrial myxoma. Hemorrhagic intracranial lesions developing after embolic stroke may initially be attributed to hemorrhagic transformation of prior infarcts, delaying recognition of metastatic disease. In our patient, serial neuroimaging demonstrated progressive enlargement of existing lesions, increasing vasogenic edema, and the development of new hemorrhagic foci despite complete resection of the primary cardiac tumor. Furthermore, an initial stereotactic biopsy demonstrated only gliosis with hemorrhage, emphasizing that a nondiagnostic biopsy does not exclude metastatic myxoma when clinical and radiographic suspicion persists. Repeat transesophageal echocardiography showed no recurrent intracardiac myxoma, illustrating that intracranial progression may occur independently of recurrent cardiac disease. Proposed mechanisms include implantation of embolized myxoma cells within cerebral vasculature with subsequent parenchymal invasion, potentially facilitated by prior ischemic injury. Recognition of these clinicoradiographic features is essential, as timely repeat tissue sampling and continued radiographic surveillance may be required to establish the diagnosis and guide multidisciplinary management.

Conclusion: Metastatic myxoma to the brain should remain in the differential diagnosis in patients with a history of atrial myxoma who develop enlarging hemorrhagic intracranial lesions after embolic stroke, even in the absence of recurrent cardiac disease. Early recognition, multidisciplinary management, and ongoing neuroimaging surveillance are essential for timely diagnosis and treatment.

53) EVALUATION OF ANTIMICROBIAL STEWARDSHIP PROGRAM DOMAINS AT KING FAISAL HOSPITAL IN KIGALI, RWANDA

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Quality Improvement / Patient Safety / High-value Care / Physician Well-being & Professional Fulfillment

Antimicrobial resistance is a global health threat that requires effective antimicrobial stewardship programs (ASPs) to promote responsible antimicrobial use. In resource-limited settings like Rwanda, implementing robust ASPs remains challenging due to infrastructure, workforce, and regulatory constraints. This study evaluates the existing ASP at King Faisal Hospital (KFH) in Kigali, Rwanda using the CDC's Global Antimicrobial Stewardship Evaluation Tool (G-ASET) and interviews with hospital faculty.

We hypothesized that potential barriers hinder ASP adoption at KFH and aimed to assess ASP components using the G-ASET while identifying obstacles and feasibility of implementing missing elements.

Semi-structured interviews with fifteen KFH staff members were conducted to evaluate the strengths and weaknesses of the current ASP, with half on the antimicrobial stewardship (AMS) committee. Interviewees were selected via targeted convenience sampling. The G-ASET was completed for each interviewee, and scores were calculated for each domain and in total. Open-ended questions were analyzed qualitatively for common themes. Feasible improvement strategies were also identified.

The most commonly reported challenges to establishing a strong ASP at KFH were outpatient antibiotic access and use, lack of dedicated time for AMS activities by the AMS team and leader, poor adherence to AMS protocols, and empiric prescribing habits. The average G-ASET score from AMS committee members was 77.06% and from non-AMS committee members was 76.63%. Interviewees scored "Leadership and Accountability" and "Resources" highest, identifying them as ASP facilitators, while "Education and Training" scored lowest and was seen as a barrier. Feasible recommendations to improve ASP efforts included strengthening local infection prevention and control/AMS efforts by dedicating time for the AMS leader, supporting national antibiotic regulation, creating an antibiotics prescribing guideline for the commonly seen infectious diseases, and increasing timely communication and general education from the AMS committee.

Findings highlight actionable gaps for ASP improvement. AMS and non-AMS committee interviewees scored the G-ASET domains similarly, showing shared perceptions of ASP implementation and recognition of barriers. Future steps will include implementing feasible recommendations for ASP improvement and, in the future, repeating the G-ASET survey to monitor for improvement.

54) EFFECT OF PREGABALIN ON HEAD & NECK CANCER PATIENTS

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Research (Basic or Clinical)

Background: Patients receiving radiation therapy for head and neck cancer commonly develop severe mucositis and odynophagia, frequently resulting in substantial opioid use for pain management. Although opioids remain the standard of care, they are associated with adverse effects including sedation, constipation, dependence, and hospitalizations related to uncontrolled pain or inadequate oral intake. Pregabalin is increasingly used as an adjuvant analgesic in supportive cancer care; however, evidence regarding its effectiveness during head and neck radiation therapy remains limited. This study evaluates whether incorporating pregabalin into routine pain management may reduce opioid requirements while maintaining pain control and improving treatment tolerance.

Methods: This retrospective single-institution chart review compares patients receiving pregabalin during radiation therapy for head and neck cancer with a historical cohort managed using opioid-based regimens alone. The primary endpoint is the mean pain score (0–10) during the final 7 days of radiation therapy, analyzed using a non-inferiority framework. The principal opioid-sparing endpoint is cumulative opioid exposure expressed as morphine milligram equivalents (MME). Secondary endpoints include longitudinal weekly pain scores, percent weight loss, feeding tube placement, emergency department visits, hospital admissions, treatment interruptions, and demographic and tumor characteristics. At this preliminary analysis, the dataset remained partially abstracted. Because cumulative MME data and abstraction of the historical opioid-only comparison cohort were incomplete, analyses were limited to descriptive statistics.

Results: The preliminary dataset contained 360 patient records, of which 115 had at least one key manually abstracted clinical variable populated. Mean patient age was 63.9 years. Maximum pregabalin dose was available for 113 patients, including 82 patients with a recorded maximum dose of 0 mg and 31 patients with a dose greater than 0 mg. Among 105 patients with both a documented pregabalin dose and at least one recorded pain score, mean weekly pain scores increased from 1.01 in week 1 (n=84) to 3.66 in week 7 (n=47), with the largest increases occurring between weeks 2–3 and 6–7. Feeding tube placement occurred in 16 patients (14.2%), hospital admission in 26 patients (22.8%), and the mean number of emergency department visits was 0.20 per patient. Mean weight loss was 3.74 units, corresponding to a mean percent weight loss of 4.1%. Missing data remained substantial for cumulative MME (100%), p16 status (81.9%), AJCC stage (73.6%), and weekly pain variables (76.7%–86.9%).

Conclusions: Patients receiving radiation therapy for head and neck cancer experienced progressively worsening pain during treatment, accompanied by clinically meaningful rates of feeding tube placement, hospitalization, and weight loss, highlighting substantial supportive care needs. These preliminary findings support completion of the planned comparative analysis evaluating pregabalin as a potential opioid-sparing strategy while maintaining pain control. Because cumulative MME data and the historical comparison cohort are not yet fully abstracted, the study's primary non-inferiority endpoint and opioid-sparing hypothesis cannot yet be evaluated. Planned comparative analyses will determine whether pregabalin reduces opioid utilization while maintaining pain control and improving treatment tolerance during radiation therapy.

55) I CAN'T BELIEVE IT IS NOT CANCER: BLASTOMYCOSIS MASQUERADING AS MALIGNANCY

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Clinical Vignette

Background: Blastomycosis is an endemic fungal infection that can rarely present with bulky mediastinal lymphadenopathy causing central airway obstruction and superior vena cava (SVC) syndrome, closely mimicking thoracic malignancy. Cases requiring temporary central airway stenting are exceedingly uncommon.

Case Presentation: A 40-year-old immunocompetent man presented with a two-month history of progressive nonproductive cough and exertional dyspnea, followed by facial swelling, dysphagia, and presyncope. Chest CT showed a large 6.3 X 6.1 cm right anterior mediastinal mass with bulky hilar and mediastinal lymphadenopathy causing extrinsic compression of the distal trachea, right mainstem bronchus, and superior vena cava, raising concern for primary thoracic malignancy. Bronchoscopy showed friable, infiltrative-appearing mucosa with severe extrinsic compression of the central airways. Given impending airway compromise, a temporary fully covered metallic Y-stent was placed to maintain airway patency. Endobronchial ultrasound-guided transbronchial needle aspiration of mediastinal lymph nodes and the mediastinal mass demonstrated necrotizing granulomatous inflammation with broad-based budding yeast consistent with Blastomyces. The patient was treated with liposomal amphotericin B followed by oral fluconazole for a planned 12-month course. Follow-up imaging after 8 weeks of treatment showed marked regression of the mediastinal mass with resolution of airway and vascular compression, allowing successful stent removal. At completion of therapy, the patient remained asymptomatic with near-complete radiographic resolution and was discharged from pulmonary clinic.

Discussion: This case highlights an uncommon presentation of blastomycosis closely mimicking aggressive thoracic malignancy with SVC syndrome and impending airway obstruction. Although the patient's imaging, bronchoscopic appearance, and clinical presentation strongly suggested an oncologic process, tissue diagnosis established blastomycosis and completely changed management. Although silicone stents remain the preferred option for known benign central airway disease, the patient's presentation and bronchoscopic findings were highly concerning for malignancy at the time of intervention. Temporary placement of a fully covered metallic Y-stent allowed rapid stabilization of the airway while awaiting definitive tissue diagnosis. Following antifungal therapy and marked regression of mediastinal disease, the stent was successfully removed after 8 weeks without complication.

Conclusion: Blastomycosis should remain in the differential diagnosis of mediastinal masses causing SVC syndrome and central airway obstruction, particularly in endemic regions. Early tissue diagnosis can prevent unnecessary oncologic interventions, and temporary airway stenting can serve as an effective bridge to definitive antifungal therapy in carefully selected patients with impending airway compromise.

56) THE BRAIN IN THE CORNER: A DISSOCIATIVE EPISODE FOLLOWING REPEATED PAINFUL VENIPUNCTURE

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Clinical Vignette

Background: Dissociative symptoms sometimes mimic psychotic conditions, making diagnosis challenging. Recognizing when dissociation is present, rather than psychosis, is essential to avoid inappropriate interventions or incorrect judgments about a patient's ability to make decisions.

Case Presentation: We present the case of a 77-year-old woman with a history of type 1 diabetes mellitus, chronic kidney disease, prior cerebrovascular accidents, bipolar disorder, and prolonged hospitalization for a duodenal perforation complicated by retroperitoneal abscess. Following approximately 35 to 40 unsuccessful venipuncture attempts for intravenous access and laboratory monitoring, she developed an unusual visual experience in which she perceived her brain as broken into pieces and located in the corner of her hospital room. Despite this perception, she acknowledged that her brain could not actually be outside her body. She denied auditory hallucinations, manic symptoms, or other features of psychosis. Mental status examination demonstrated intact orientation, linear thought processes, preserved judgment, and good insight. Brain MRI revealed no acute intracranial abnormalities. The psychiatrist determined that her presentation was most consistent with a dissociative-type reaction precipitated by severe procedural distress rather than primary psychosis. Her symptoms resolved without antipsychotic therapy following supportive intervention.

Discussion: Recognizing dissociation in hospitalized patients with unusual perceptions may prevent misdiagnosis. In this case, her understanding of reality, the timing after repeated painful attempts at IV access, and the absence of other psychiatric or neurological features pointed toward dissociation rather than psychosis. Identifying these subtle differences helped avoid unnecessary medication and ensured a fair evaluation of her decision-making abilities.

Conclusion: Dissociative symptoms should be considered when patients develop unusual perceptions during periods of acute stress, especially if they remain aware that their experiences are not real. Thorough assessment helps avoid diagnostic errors and supports appropriate care.

57) A CASE OF CREUTZFELDT JAKOB DISEASE COMPLICATED BY RECURRENT SUPRAVENTRICULAR TACHYCARDIA

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Clinical Vignette

Introduction: Creutzfeldt Jakob Disease (CJD) is a rapidly progressing fatal prion disease characterized by progressive dementia with death typically within one year of symptoms and an incidence of 1-2 cases per million yearly. Patients initially have memory loss and behavior changes advancing to ataxia, rigidity, tremors, myoclonus and dysphagia. Diagnosis relies on magnetic resonance imaging (MRI), electroencephalography, and cerebrospinal fluid studies. Evidence suggests CJD alters autonomic innervation and can present with tachycardia, though research is limited on the interplay of CJD with supraventricular tachyarrhythmias.

Case Report: A 59-year-old male presented with acute onset chest pain and was found to be in supraventricular tachycardia which converted to normal sinus rhythm after adenosine. He was tachycardic, tachypneic, hyperthermic, and rigid with diffuse myoclonus. History from the patient's wife noted he was having altered behavior, confusion, diaphoresis, sleepwalking, acting out dreams and trouble walking for the past few months. His recent memory and word finding difficulties were initially intermittent but had progressively worsened in the past week.

On the first day of hospitalization while on his home metoprolol dose, the patient had another episode of supraventricular tachycardia that resolved after adenosine. Due to severe agitation, he was intubated to obtain lumbar puncture and MRI. Brain MRI demonstrated symmetric restricted diffusion bilaterally in the basal ganglia and thalami, asymmetric cortical diffusion restriction involving the bilateral superior frontal gyri and bilateral insula supporting CJD as a differential diagnosis. On day five of hospitalization over the span of two hours, the patient developed recurrent episodes of supraventricular tachycardia and atrial fibrillation with rapid ventricular response that were complicated by hypotension. These episodes were refractory to six doses of adenosine, four doses of metoprolol and an esmolol drip before conversion to sinus rhythm on an amiodarone drip which he remained on for several days. His daily metoprolol dose was then increased. A positive RT-Quic from CSF studies suggested a diagnosis of CJD on day ten of hospitalization. The patient had episodes of supraventricular tachycardia on day fourteen of hospitalization that were controlled with amiodarone which he remained on until passing away the following day.

Discussion: This case highlights the impact that autonomic disruption in CJD can have, including worsening supraventricular tachycardia. Reports of supraventricular tachycardia in CJD are lacking in current literature. However, in another prion disease, fatal familial insomnia, thalamic involvement due to neuronal loss in the mediodorsal nucleus is thought to cause autonomic dysfunction including tachycardia and hypertension. Additionally, some research proposes that the insula impacts autonomic function as lesions and damage to the insula are known to be associated with cardiac arrhythmias and blood pressure variation. Both insular and thalamic damage may be part of the pathophysiology underlying recurrent supraventricular tachyarrhythmia in this patient with CJD.

Due to the autonomic dysregulation, those with CJD may be at risk for recurrent episodes of supraventricular tachycardia as is demonstrated in this case though current research on this manifestation is limited. Future cases may consider exploring escalating control strategies to prevent recurrences considering the underlying driving pathophysiology.

58) TOO MUCH OF A GOOD THING: A FIBER SUPPLEMENT–ASSOCIATED GASTRIC BEZOAR

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Clinical Vignette

Bulk-forming fiber supplements such as psyllium are widely recommended for the management of constipation. However, excessive intake in the setting of impaired gastrointestinal transit may contribute to bezoar formation. Gastric bezoars are accumulations of indigestible material in the gastrointestinal tract that can, in rare cases, progress to obstruction. Prompt recognition is important to prevent worsening of the obstruction. Once a bezoar has formed, management ranges from conservative medical therapy to surgical intervention depending on the time-to-treatment and the severity of obstruction.

A 78-year-old woman with gastroesophageal reflux disease, Barrett's esophagus, hypothyroidism, irritable bowel syndrome, and history of paraesophageal hernia repair 20 years prior, presented with one week of progressive emesis, abdominal discomfort, and obstipation. She had progressively increased her intake of psyllium fiber supplements at the instruction of her primary care provider to relieve her constipation. Eight days before presentation, routine surveillance esophagogastroduodenoscopy for her Barrett's esophagus demonstrated a large amount of gastric contents that made adequate visualization of the stomach difficult.

A markedly distended, firm, tympanic, and tender abdomen were present on admission. X-ray and MRI/MRCP demonstrated gastric obstruction with a transition point at the mid-gastric body and marked proximal gastric distention measuring up to 18.6 cm, concerning for a large gastric bezoar. Initial nasogastric decompression evacuated approximately 1.5 liters of gastric contents immediately and was left to low intermittent suction. The tube required frequent irrigation because of repeated clogging over the following days. Given her clinical stability, the surgical and gastroenterology teams elected to pursue an initial trial of nonoperative management following shared decision-making with the patient.Conservative treatment proceeded with aggressive nasogastric irrigation and suction, metoclopramide, and Pancrelipase, a pancreatic enzyme replacement supplement. Temporary total parenteral nutrition was also provided due to poor nutritional status. Repeat CT imaging five days later demonstrated near-complete resolution of the bezoar with passage of gastric contents. Her diet was gradually advanced, and she was discharged home tolerating oral intake.

This case highlights excessive bulk-forming fiber supplementation as a potential contributor to gastric bezoar formation in susceptible patients such as this woman who had prior gastric surgery for her hiatal hernia. Additionally, even large gastric bezoars such as this may be successfully managed with an initial trial of conservative therapy in carefully selected, clinically stable patients. Appropriate outpatient counseling on individualized bowel regimens is necessary to prevent similar or worse presentations. In conclusion, fiber can be effective in relieving constipation. However, in rare circumstances, it can contribute to bezoar formation and life-threatening gastric obstruction.

59) NEWLY DIAGNOSED IGA VASCULITIS (IGAV) WITH ABNORMAL DERMATOLOGIC FINDINGS IN A 25-YEAR-OLD WITH CROHN'S DISEASE

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Clinical Vignette

Introduction: IgA vasculitis (IgAV) is a small-vessel vasculitis characterized by immune deposits into the vessel walls, presenting with a tetrad of symptoms including palpable purpura, arthralgias, renal involvement, and abdominal pain. IgAV is most commonly seen in the pediatric population, and the diagnosis is primarily clinical, with treatment often involving supportive care.

Case : A 25-year-old male with PMHx of Crohn's disease, recent diagnosis of gastritis and gastric ulcer, presented with persistent upper abdominal pain, erythematous papular rash, bilateral hand pain, and bilateral arm swelling. He was transferred from an OSH for a rheumatology workup. On admission, the abdominal pain was constant and localized to the upper abdomen. The upper extremity swelling was most pronounced in the right hand, and a maculopapular raised rash was present on the bilateral upper extremities, upper back and torso, and lower extremities. Laboratory findings included leukocytosis, elevated CRP, elevated total protein, and abnormal urinalysis with trace ketones, protein, and erythrocytes. Initial CT abdomen/pelvis showed subtle edema and fat stranding in the ascending colon and prominent mesenteric lymph nodes, without discrete abscess or significant bowel inflammatory changes. This constellation of findings raised concern for a systemic vasculitis. Rheumatology, GI, and dermatology were all consulted. Skin biopsy showed focal deposits of IgA, supportive of IgAV in the context of a Crohn's flare. After a course of IV steroids, which was then transitioned to PO, the patient's symptoms progressively resolved.

Discussion: Here we report a case of IgAV with abnormal dermatologic findings in a 25-year-old patient with Crohn's disease. Although IgAV is predominantly a pediatric condition, it should not be written off as such and forgotten in adult patients. This is important because IgAV has higher rates of recurrence and renal disease among adults, in contrast to the typical self-limiting course that occurs in children. Additionally, the association between inflammatory bowel disease such as Crohn's and IgAV is currently emerging but not yet well established in the literature. The pathophysiological link is plausible, as both disorders are characterized by immune dysfunction mediated by IgA dysregulation. The key finding in this case was the atypical nature of the skin findings, which can broaden the differential and lead to a delay in diagnosis. This is pertinent in patients with Crohn's disease, as the findings can be written off as Crohn's associated cutaneous manifestations. This case highlights that even if the morphology of the skin lesions is atypical, it is essential that IgAV remains in the differential diagnosis in adults with IBD presenting with cutaneous findings.

60) COMPARATIVE EFFICACY OF NALTREXONE, BUPROPION, AND THEIR COMBINATION FOR METHAMPHETAMINE USE DISORDER: A SYSTEMATIC REVIEW

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Research (Basic or Clinical)

Introduction: Methamphetamine use disorder carries a substantial and growing burden across healthcare systems globally, yet no pharmacological treatment has achieved FDA approval to date. Behavioral therapies, though widely deployed, demonstrate limited durability in the absence of adjunctive pharmacotherapy. Naltrexone and bupropion have each attracted investigative interest on mechanistic grounds — the former through opioid receptor antagonism attenuating reward salience, the latter through dopaminergic and noradrenergic reuptake inhibition countering stimulant-associated dysphoria and craving. Despite this rationale, monotherapy trials have returned inconsistent results, and whether combining these agents generates effects beyond what either produces alone has not been systematically characterized. This meta-analysis was undertaken to directly compare naltrexone monotherapy, bupropion monotherapy, and their combination against placebo, with the goal of clarifying the relative contribution of each treatment strategy to methamphetamine use reduction.

Methods: Randomized controlled trials evaluating naltrexone, bupropion, or their combination in adults with methamphetamine use disorder were identified through structured searches of PubMed, EMBASE, and Cochrane Central. Eligible studies required urine drug screening as an objective outcome measure. Three pre-specified subgroups were formed: naltrexone monotherapy, bupropion monotherapy, and combination pharmacotherapy. Pooled odds ratios with 95% confidence intervals were derived under a random-effects framework to accommodate expected inter-study variability. Heterogeneity was quantified using I^2 and Cochran's Q, with formal between-subgroup testing applied to assess whether treatment modality modified effect size. A leave-one-out sensitivity analysis was carried out to probe the stability of pooled estimates and identify studies with disproportionate influence. Runarsdottir et al. (2017) was withheld from quantitative synthesis on the basis of high non-adherence rates and substantial UDS incompletion, which rendered outcome data insufficiently reliable for pooling.

Results: Combined naltrexone plus bupropion demonstrated a synergistic and statistically significant reduction in methamphetamine use (OR 5.62, 95% CI 2.50–12.61, $p<0.001$), substantially greater than naltrexone monotherapy (OR 2.05, 95% CI 0.84–5.04, $p=0.12$) or bupropion monotherapy (OR 1.17, 95% CI 0.68–2.03, $p=0.57$), with significant between-subgroup differences confirming that the three treatment groups differed meaningfully in effect ($Q=9.92$, $df=2$, $p=0.01$). The overall pooled estimate was OR 1.75 (95% CI 0.93–3.29, $p=0.08$), with moderately high heterogeneity across studies ($I^2=66.1\%$). A leave-one-out sensitivity analysis excluding Anderson et al. reduced heterogeneity to $I^2=50.9\%$ and strengthened the pooled estimate to OR 2.20 (95% CI 1.21–3.99, $p=0.01$), confirming that primary findings were robust to individual study influence.

Conclusion: The data presented here make a pointed case for combination pharmacotherapy as the most efficacious currently-studied strategy for methamphetamine use disorder. Neither agent alone crossed the threshold of statistical significance, yet their pairing produced an effect of clinically meaningful magnitude. This pattern of synergy — where the combination substantially outperforms its individual components — is not incidental; it reflects complementary neurobiological mechanisms acting on overlapping but distinct aspects of stimulant dependence. For a condition with no approved treatment and considerable unmet need, these findings should directly inform clinical decision-making and accelerate regulatory consideration of combination naltrexone-bupropion as a priority intervention.

61) HYPERNATREMIA AND POLYURIA IN A PATIENT WITH METASTATIC BREAST CANCER

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Clinical Vignette

Background: Arginine vasopressin deficiency (AVP-D), formerly central diabetes insipidus, is an uncommon but important complication of intracranial metastatic disease. Metastases to the hypothalamic-pituitary axis most commonly arise from breast and lung cancers and may present with polyuria, polydipsia, hypernatremia, and inappropriately dilute urine. Early recognition is essential, as symptoms respond readily to desmopressin therapy.

Case Presentation: A 58-year-old woman with metastatic ER-positive, PR-positive, HER2-negative breast cancer and extensive central nervous system metastatic disease presented with hypotension, hypoxia, marked polyuria, and polydipsia. She had recently completed whole-brain radiation therapy and had a PleurX catheter for recurrent malignant pleural effusions. Laboratory evaluation demonstrated hypernatremia with serum sodium of 150 mmol/L, inappropriately dilute urine with urine osmolality of 114 mmol/L, and urine sodium of 22 mmol/L. Anterior pituitary evaluation was preserved, including ACTH, cortisol, and free thyroxine levels. Infectious evaluation was unrevealing. Brain MRI demonstrated multiple enhancing cystic/necrotic hemorrhagic metastases and mild pituitary stalk thickening without a discrete sellar or suprasellar mass. Given the patient's intracranial metastatic burden, pituitary stalk abnormality, biochemical profile, and preserved anterior pituitary function, metastatic lesion-induced AVP-D was diagnosed. Treatment with oral desmopressin 0.1 mg nightly led to normalization of serum sodium and marked improvement in polyuria and polydipsia.

Conclusion: Although drug-induced AVP resistance, radiation-related pituitary injury, and infectious etiologies were considered, the rapid response to desmopressin and presence of pituitary stalk thickening supported metastatic lesion-induced AVP-D. This case highlights the importance of considering AVP-D in patients with advanced malignancy who develop unexplained hypernatremia and polyuria. Prompt diagnosis and treatment can provide rapid biochemical correction and symptomatic relief, even in the setting of progressive metastatic disease.

62) CERVICAL CANCER INCIDENCE AND SURVIVAL DISPARITIES IN WISCONSIN, 2014–2021

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Research (Basic or Clinical)

Background: Cervical cancer remains a preventable cause of morbidity and mortality in the United States, with available vaccination and screening modalities. However, nationally, disparities in outcomes persist across racial and socioeconomic groups. In Wisconsin, these disparities have been insufficiently characterized. Detailed local data is needed to inform policy, planning, and targeted intervention. As such, our study aims to evaluate cervical cancer metrics across race, ethnicity, socioeconomic indicators, and geography using statewide registry data.

Methods: Our study utilizes Wisconsin Cancer Reporting System (WCRS) data from 2014–2021. Descriptive statistics summarized demographics and clinical characteristics. Cox proportional hazards models examined predictors of cervical cancer survival. Neighborhood-level poverty (American Community Survey) and Rural-Urban Community codes (United States Department of Agriculture) were linked using patient census tract data. Adaptive spatial filtering was used to map geographic variation in cervical cancer incidence across Wisconsin.

Results: A total of 1,432 cases were identified in Wisconsin from 2014–2021. The median age at diagnosis was 50 years, with Hispanic patients diagnosed at a younger median age of 43 years. Black patients resided in tracts with higher mean poverty (24.9%) than white (8.4%) patients. In Cox models, patients insured primarily by Medicaid (HR=1.71, p=0.005) and Medicare (HR=2.34, $p<0.001$) succumbed to cervical cancer earlier than those privately insured. Spatial analyses demonstrated elevated incidence in southern urban areas and northeastern regions of Wisconsin.

Conclusions: Marked disparities in cervical cancer incidence and survival persist in Wisconsin. These findings underscore the need for targeted screening, early detection, and care navigation efforts to improve outcomes across populations.

63) A STATEWIDE SURVEY OF WISCONSIN HOSPITALISTS: PERCEIVED CHALLENGES, NEEDS, AND PROFESSIONAL PRIORITIES

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Research (Basic or Clinical)

Background: Hospital medicine faces increasing administrative demands, workforce challenges, and concerns regarding clinician well-being. Understanding hospitalists' perspectives is essential for informing workforce retention, professional development, and advocacy efforts. We surveyed hospitalists across Wisconsin to characterize workplace challenges, educational needs, and professional priorities.

Methods: We conducted a statewide cross-sectional survey of Wisconsin hospitalists assessing demographics, practice characteristics, job satisfaction, workplace challenges, educational needs, and priorities for professional societies. Quantitative data were summarized using descriptive statistics, and free-text responses underwent thematic analysis.

Results: Ninety-three hospitalists completed the survey. Most respondents had a background in internal medicine (91.4%), 36% had five or fewer years of practice experience, and most managed 11–15 patient encounters per shift. Overall, 76% reported being satisfied or very satisfied with their job. Despite this, respondents identified several major workplace challenges, including excessive documentation and electronic medical record burden (43%), patient-related issues such as placement delays and prolonged hospitalizations (42%), frequent workflow interruptions (42%), burnout (32%), and peer-to-peer reviews or insurance denials (31%). The greatest educational need was evidence-based clinical updates (72%). Thematic analysis of free-text responses identified three recurring priorities: reducing administrative burden, improving compensation, and strengthening staffing models. Respondents also identified advocacy (89%), professional development and career advancement (69%), and continuing medical education (65%) as the highest priorities for professional societies.

Conclusion: Although most Wisconsin hospitalists reported high overall job satisfaction, administrative burden, workflow inefficiencies, and burnout remain substantial challenges. These findings identify actionable priorities for healthcare organizations and professional societies to improve hospitalist well-being, workforce sustainability, and professional support through advocacy, education, and system-level interventions.

64) BALANCING EFFICIENCY AND SAFETY: RESIDENT PHYSICIAN PERSPECTIVES ON SECURE TEXT MESSAGING

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Research (Basic or Clinical)

Background: Secure text messaging systems (STMS) have become integral to inpatient communication, improving efficiency and multidisciplinary collaboration while raising concerns regarding workflow disruption, alarm fatigue, and patient safety. Resident physician perspectives on STMS remain incompletely understood. We evaluated resident perceptions of secure messaging and identified opportunities to optimize its use in graduate medical education.

Methods: We conducted a cross-sectional mixed-methods study of resident physicians at Froedtert & the Medical College of Wisconsin between June 24 and July 24, 2025. Participants completed a survey assessing perceptions of STMS using Likert-scale and free-text responses. Quantitative data were analyzed descriptively and compared across postgraduate year (PGY) levels. Free-text responses underwent inductive thematic analysis.

Results: Thirty-eight residents participated. Most respondents agreed that STMS improved communication efficiency (91.4%), facilitated multidisciplinary care coordination (97.1%), and promoted patient safety through closed-loop communication (81.8%). Despite these benefits, 62.5% reported increased interruptions affecting workflow and education, 71.8% reported cognitive overload and alarm fatigue, and 68.8% expressed concerns that communication failures could negatively affect patient safety. Urgency ratings differed significantly across PGY levels ($p=0.038$), with senior residents perceiving secure chat messages as less urgent than junior residents. Qualitative analysis identified three major themes: positive characteristics of secure chat, negative characteristics of secure chat, and proposed improvements. Residents valued collaboration, communication efficiency, and message documentation but consistently reported inappropriate use of secure messaging for urgent clinical issues, contributing to uncertainty regarding communication urgency and escalation. Participants advocated for clearer distinctions between pager-based communication for urgent concerns and secure messaging for routine communication.

Conclusion: Resident physicians perceive secure text messaging as an effective communication tool that enhances efficiency and multidisciplinary collaboration but report persistent concerns regarding communication burden, alarm fatigue, and inconsistent urgency triage. Standardized communication guidelines that clearly distinguish urgent from non-urgent communication may improve patient safety while preserving the efficiency benefits of secure messaging in graduate medical education.

65) BEYOND ALCOHOL: WERNICKE'S ENCEPHALOPATHY FROM A GLP-1 AGONIST

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Clinical Vignette

Introduction: Wernicke's encephalopathy is an acute neurological condition caused by severe thiamine (vitamin B1) deficiency, classically characterized by the triad of symptoms of altered mental status, oculomotor dysfunction, and gait ataxia. A commonly undiagnosed condition, it is typically associated with severe alcohol use disorder; however, it has been increasingly recognized in the setting of non-alcoholic related malnutrition, persistent vomiting, and gastrointestinal disorders that impair absorption.

Case Description: A 67-year-old woman with fibromyalgia, hypertension, and GERD presented to an outside ED for evaluation of three weeks of ongoing nausea and vomiting. Laboratory analysis demonstrated hypokalemia, and the patient was discharged from the ED with anti-emetics. She re-presented with similar symptoms, and repeat labs (CBC, CMP, LFTs, Lipase) were unremarkable, but a CT abdomen showed gastric wall thickening suggestive of gastritis. She was again discharged with supportive care. One month later, she presented to our ED, now noted to have a rapid cognitive decline and progressive gait difficulties resulting in wheelchair dependence. Laboratory analysis demonstrated hypokalemia, hypernatremia, and hypophosphatemia, concerning for malnutrition. Physical exam revealed significant memory impairment, horizontal and vertical nystagmus, dysdiadochokinesia, dysmetria, and preserved strength. She was admitted for further neurologic workup. Given concern for paraneoplastic syndrome, encephalitis, and encephalopathy, a broad workup was performed, including B12, folate, TSH, HIV, syphilis, CT chest/abdomen/pelvis, mammography, and CSF studies including meningoencephalitis and prion panels, all of which were unrevealing. The diagnostic breakthrough came when brain MRI revealed T2/FLAIR hyperintensity in the periaqueductal gray matter, hypothalamus, and fornix, with symmetric mammillary body enhancement characteristic of Wernicke's encephalopathy. A low serum thiamine level of 61 nmol/L supported the diagnosis. She received high-dose intravenous thiamine therapy and was continued on oral thiamine supplementation. A repeat MRI three weeks later showed improved periaqueductal signal with mild residual mammillary enhancement, providing radiographic support for the diagnosis and effective therapy. After weeks of supplementation and PT/OT, she was discharged to acute inpatient rehabilitation in improved condition.

Our patient had no significant alcohol history. Chart review and additional history revealed she had been on tirzepatide and had developed nausea and vomiting while on therapy. After a month of feeling unwell, it was discontinued. However, her symptoms persisted despite its discontinuation, with several episodes of emesis and a near-complete inability to eat that led to her initial ED visits.

Discussion: This case demonstrates non-alcoholic Wernicke's encephalopathy likely triggered by a GLP-1 receptor agonist (tirzepatide), which precipitated severe, persistent emesis leading to malnutrition, caloric deprivation, and ultimately thiamine deficiency. The two-month diagnostic delay highlights how readily this presentation is attributed to functional or psychogenic causes before the classic triad emerges. Beyond alcohol use, thiamine deficiency should be considered with hyperemesis gravidarum, bariatric surgery, malignancy, and gastrointestinal disorders that impair intake or absorption. As GLP-1 agonist use increases, clinicians should recognize severe nausea and vomiting as adverse effects, with Wernicke's as a rare but preventable complication. This case underscores the importance of early empiric thiamine supplementation in any patient with sustained emesis, regardless of cause, for an often-missed, preventable injury.

66) MEDICAL MANAGEMENT OF A COMMON SURGICAL EMERGENCY

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Clinical Vignette

Introduction: Inpatient management of a bowel perforation requires surgical intervention under most circumstances1. Spillage of intestinal contents within the peritoneal cavity comes with a high risk for peritonitis or intra-abdominal abscess, making bowel perforation a common surgical emergency with potentially life threatening sequelae1-2. Despite recent advances in surgical techniques, mortality of non-traumatic small bowel perforations is as high as 42%3. Increased age, comorbidities, and delays in diagnosis over 24 hours are related to poor outcomes2. Here, we present the case of an atraumatic small bowel perforation which was managed successfully without surgical intervention. Case Description

This is the case of a 93-year-old male patient with a past medical history of hypertension, HFrEF with EF 43%, 2nd degree AV block status post pacemaker, hyperlipidemia, coronary artery disease, type II diabetes, bladder cancer status post TURP, and pulmonary hypertension who presented with acute abdominal pain, nausea, and vomiting. On presentation, he was hemodynamically stable, abdominal exam was significant for mild left sided tenderness without peritoneal signs, and he had a leukocytosis to 18.1. CT abdomen was suggestive of small bowel perforation. He initially declined surgery as his pain was well controlled despite understanding the risks. He was placed on a two-week course of Zosyn and was strict NPO on TPN and IV fluids. Repeat imaging suggested a developing, non-organized abscess which was not drainable. Within days of admission, the patient was willing to proceed with surgery. However, he was no longer a candidate for elective, non-emergent surgery due to concerns of prolonged inflammation complicating the expected surgical course and leading to high morbidity and mortality potential. While inpatient, serial abdominal exams remained benign. Blood cultures remained negative, and his leukocytosis resolved. TPN was discontinued, and patient was slowly given a diet per recommendations from general surgery. The patient was discharged on a prolonged course of Augmentin. Repeat CT approximately one month following his initial presentation showed persistent yet decreased mesenteric inflammatory changes compared to prior CT's.Discussion

This case demonstrates that a common surgical emergency can successfully be medically managed, although the risk of such an approach is quite high. At the same time, risk of surgical intervention in this 93-year-old patient with multiple comorbidities is also high. Previous literature has demonstrated that in patients with minimal symptoms and in good clinical condition, surgical intervention can be delayed to allow for a period of observation, although this is not common practice4,5. Our patient had minimal symptoms, but as a 93-year-old with multiple comorbidities, was in relatively poor clinical condition. Further, an RCT showed some success with non-operative management of bowel perforations, but there was a high failure rate among elderly patients4. This case serves as an example of situations where no perfect option exists in terms of medical decision making. Both medical and surgical management of this patient were extremely high-risk options despite surgical intervention being common practice. The surprising success of medical management for a bowel perforation necessitates additional research in which patients should or should not undergo surgical intervention.

67) TEMPORAL TRENDS AND IN-HOSPITAL OUTCOMES OF HOMELESS TRAUMATIC SPINAL CORD INJURY (TSCI) PATIENTS: A RETROSPECTIVE NATIONAL DATABASE STUDY (2010–2020)

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Background: Traumatic spinal cord injury (TSCI) is associated with substantial morbidity, long-term disability, and high healthcare utilization. People experiencing homelessness (PEH) face additional barriers to care, including limited access to rehabilitation services, challenges surrounding discharge planning, and reduced access to longitudinal follow-up. While prior studies have described the broader health burden among PEH, national data examining inpatient outcomes and healthcare utilization following TSCI remain limited. Understanding these patterns is important given the complex rehabilitation needs, discharge planning challenges, and long-term care requirements associated with spinal cord injury.

Methods: We performed a retrospective cohort study of adult TSCI hospitalizations from 2010–2020 using the Nationwide Readmissions Database, a nationally representative all-payer inpatient database. Homelessness was identified using ICD-9-CM and ICD-10-CM diagnosis codes. Survey-weighted analyses generated national estimates. Multivariable logistic and linear regression models evaluated associations between homelessness and in-hospital mortality, length of stay (LOS), total hospital charges, and discharge disposition after adjustment for demographic and hospital-level factors. Temporal trends were assessed using survey-weighted regression models. Propensity score matching was performed as a complementary exploratory analysis to balance observed covariates between homeless and housed patients.

Results: An estimated 231,993 TSCI admissions were identified nationally, including 1,944 admissions among PEH. Compared with housed patients, PEH were younger (48 vs. 53 years), more frequently male (87% vs. 70%), and more likely to reside in the lowest ZIP-code income quartile (55% vs. 32%). Assault- and firearm-related injuries were more common among PEH, whereas falls predominated among housed patients. Crude in-hospital mortality was lower among PEH (3.25% vs. 7.30%); however, mortality differences were no longer significant after multivariable adjustment or propensity score matching. Homelessness was independently associated with prolonged hospitalization, with adjusted LOS increases of approximately 4–6 days, and with significantly higher hospital charges, with adjusted increases of approximately $42,000. PEH were more likely to leave against medical advice and less likely to receive home health services following hospitalization. Documentation of homelessness among TSCI admissions increased significantly during the study period (adjusted OR 1.12 per year, $p<0.001$), while LOS and hospital charges remained relatively stable over time.

Conclusions: Among patients hospitalized with TSCI, homelessness was associated with substantially greater inpatient resource utilization, longer hospitalizations, and differences in discharge patterns despite similar adjusted in-hospital mortality. These findings suggest that social and structural determinants of health may substantially influence inpatient care trajectories following TSCI, even when short-term mortality is similar. Efforts aimed at improving discharge planning, rehabilitation access, and care transitions may represent important opportunities to reduce disparities and optimize recovery among vulnerable patient populations. Further study is needed to identify the patient-, hospital-, and system-level factors that contribute to these differences and to inform interventions that improve outcomes following hospitalization.

68) TRENDS IN TRAUMATIC SPINAL CORD INJURY–ASSOCIATED HOSPITALIZATIONS IN THE UNITED STATES, 2010–2022: A NATIONAL INPATIENT SAMPLE ANALYSIS

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Research (Basic or Clinical)

Background: Traumatic spinal cord injury (TSCI) is associated with substantial morbidity, mortality, disability, and healthcare utilization. Contemporary data suggest that the epidemiology of TSCI may be shifting toward older adults, with important implications for prevention, inpatient management, rehabilitation, and discharge planning. Updated national data are needed to characterize hospitalization trends and inpatient outcomes.

Methods: We conducted a retrospective serial cross-sectional study of patients aged ≥16 years with a principal or secondary diagnosis of TSCI in the National Inpatient Sample from 2010–2022. Survey weights generated nationally representative estimates. U.S. Census population estimates were used to calculate annual TSCI-associated hospitalization rates per 1,000,000 age-eligible residents overall and by age, sex, and race. Because the National Inpatient Sample is discharge-level rather than patient-level, estimates were interpreted as hospitalization rates rather than true incidence. Segmented sensitivity analyses evaluated effects of the 2015 ICD-9-CM to ICD-10-CM transition. Survey-weighted multivariable regression models examined factors associated with in-hospital mortality, nonroutine discharge among survivors, and length of stay.

Results: Among 57,570 unweighted hospitalizations, the weighted national estimate was 287,567 TSCI-associated hospitalizations. Hospitalization counts were 25,168 in 2010 and 26,100 in 2022, while the overall hospitalization rate declined modestly from 100.23 to 95.31 per 1,000,000 age-eligible residents. Age-specific trends showed a shift toward older adults. Hospitalization rates declined among patients aged 16–24 years from 74.82 to 49.61 per 1,000,000 and among those aged 25–44 years from 78.04 to 53.13 per 1,000,000. Rates remained relatively stable among adults aged 45–64 years but increased among those aged ≥65 years from 176.36 to 185.74 per 1,000,000. Men had higher hospitalization rates than women. Black non-Hispanic patients had the highest race-specific hospitalization rates, although interpretation was limited by changing race/ethnicity completeness over time. Unknown or unclassified injury mechanisms remained common, while ascertainment of known mechanisms improved after implementation of ICD-10-CM. Calendar year and ICD period were not independently associated with in-hospital mortality. However, age ≥65 years was strongly associated with mortality (adjusted OR 4.22), as were male sex (OR 1.54) and motor vehicle crash mechanism (OR 1.50). Older age was also associated with greater odds of nonroutine discharge. The post-ICD-10 period was associated with higher odds of nonroutine discharge and shorter adjusted length of stay.

Conclusions: From 2010–2022, the overall national rate of TSCI-associated hospitalizations remained relatively stable, but the burden shifted substantially toward older adults while declining among younger populations. Older age was strongly associated with inpatient mortality and nonroutine discharge, highlighting the growing importance of geriatric trauma care, fall prevention, rehabilitation access, and discharge planning. Prevention and systems-of-care initiatives should increasingly focus on the needs of an aging patient population. Contemporary administrative analyses should be interpreted as hospitalization-rate studies rather than true incidence studies because discharge-level databases cannot distinguish unique patients from repeat hospitalizations.

69) LONG TERM OUTCOMES IN AML PATIENTS RECEIVING ALLOGENEIC HEMATOPOIETIC CELL TRANSPLANTATION CORRESPONDING TO CYCLES OF PRE-TRANSPLANT CHEMOTHERAPY

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Research (Basic or Clinical)

Background and Goals: Acute myeloid leukemia (AML) is a relatively rare disease, however mortality in patients with AML is disproportionately large. While younger individuals tend to have a better prognosis, treatment response and long term prognosis can vary significantly due to the biologic heterogeneity of the disease. Upon diagnosis, clinicians evaluate a variety of prognostic factors to stratify patients into risk categories and guide treatment planning. Identifying high-risk patients early is critical for optimizing therapeutic strategies and improving survival outcomes. Historically, high-risk patients received three cycles of intensive cytotoxic chemotherapy before bone marrow transplant (BMT). At this time, the current standard of care is shifting towards an alternative, more rapid BMT timing, with BMT occurring as soon as chemotherapy induces a complete remission (CR). This study compares outcomes of high-risk AML patients following BMT, and aims to explore whether additional upfront cycles of chemotherapy provide benefit, or whether there is little gain from subsequent cycles once first complete remission (CR1) is attained.

Methods: This is a retrospective study with overall survival (OS) and leukemia free survival (LFS) as the primary endpoints, evaluated from date of transplant. Detailed chart review was conducted to determine measurable residual disease (MRD) prior to allogeneic BMT, and long term outcomes such as treatment complications, disease relapse, remission, or death. Overall survival and leukemia free survival were calculated using the Kaplan-Meier estimator and compared using the log-rank test. A total of 34 patients treated for high-risk AML who underwent one BMT at our local center were compared based on number of chemotherapy cycles prior to transplant. Analysis was repeated for patients who achieved CR1 after one cycle of chemotherapy, followed by patients that achieved MRD negativity after one cycle.

Results: Kaplan-Meier survival curves were plotted to evaluate OS and LFS at time points of 1 year and 2 years post transplant. Both OS and LFS were higher at 1 year and 2 years post BMT for patients who underwent rapid BMT timing. This trend persisted when comparing only the patient population that achieved CR1 after one cycle of chemotherapy, followed by the patient population that achieved MRD negativity after one cycle of chemotherapy, however these results were not statistically significant. Overall, a larger sample size and more statistical power is needed to substantiate these observations.

Conclusions: Despite key differences between historic and rapid bone marrow transplant timing, the underlying motives of these frameworks highlight necessary goals of treatment. With more upfront chemotherapy, the historic route aims to maximally reduce disease burden, while the rapid route adjusts to minimize treatment-related toxicity. It is clear the appropriate next step is to find where these goals meet. This analysis suggest this topic requires additional study, and supports the growing emphasis on individualized, risk-adapted therapy in AML management. Analysis with a larger patient population could elucidate improvements to clinical practice such that these patients receive the highest quality of care while reducing the toxic effects of AML treatment.

70) ANCHORING BIAS: RECOGNIZING EHRLICHIOSIS IN PATIENTS WITH MYELODYSPLASTIC SYNDROME

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Clinical Vignette

Background: Myelodysplastic syndrome (MDS) is a clonal hematopoietic stem cell disorder characterized by ineffective hematopoiesis, cytopenias, and an increased risk of progression to acute myeloid leukemia. Ehrlichiosis, in contrast, is a tick-borne zoonotic infection with nonspecific symptoms, including fever, malaise, headache, gastrointestinal disturbances, and laboratory abnormalities such as leukopenia and thrombocytopenia. The overlapping hematologic features of MDS and ehrlichiosis can complicate the diagnostic process.

Case Presentation: A 77-year-old man with a past medical history of type II diabetes mellitus, hyperlipidemia, hypertension, chronic kidney disease, and myelodysplastic syndrome requiring weekly platelet transfusions presented with subacute intermittent headache, diarrhea, generalized weakness, and fever. His white blood cell count increased from 3.7 × 10□/L several days before admission to 10.4 × 10□/L on presentation, while his hemoglobin and platelet counts remained near baseline. A diagnostic chest X-ray did not show evidence of acute cardiopulmonary abnormalities. On the night of admission, the patient was empirically started on cefepime as he developed a fever of 103°F. An extensive infectious evaluation, including blood cultures, respiratory viral testing, urinalysis, and stool testing for Clostridioides difficile, norovirus, and rotavirus, was unrevealing. Computed tomography of the chest/abdomen/pelvis demonstrated no source of infection. By hospital day 2, he required red blood cell and platelet transfusions, and his worsening cytopenias were initially attributed to a presumed viral illness in the setting of MDS. Cefepime was discontinued on hospital day 3. On hospital day 4, peripheral blood smear demonstrated rare monocytic cytoplasmic inclusions concerning for Ehrlichia, and on hospital day 5, stool culture grew Campylobacter jejuni. Further retrospective investigation revealed recent tick exposure while gardening at his son's home. Infectious Diseases was consulted and recommended that the patient complete a 21-day course of doxycycline and a three-day course of azithromycin for Ehrlichia and Campylobacter jejuni, respectively. Subsequent PCR and serologic testing for ehrlichiosis were negative, and repeat peripheral blood smear was without previously seen inclusions, demonstrating only MDS. At Infectious Diseases outpatient follow-up, improvement in all cell lines was noted following doxycycline administration.

Discussion: Patients with MDS are predisposed to infection because of quantitative and qualitative neutrophil dysfunction. However, ehrlichiosis and MDS share several hematologic abnormalities, particularly thrombocytopenia, which may contribute to diagnostic anchoring and delayed recognition of tick-borne illness. Our case was further complicated by concomitant Campylobacter infection, which can also cause thrombocytopenia.

PCR sensitivity for Ehrlichia is only 60–85%, which may explain the negative result in our patient. Visualization of morulae on peripheral smear may facilitate early presumptive diagnosis, as they are detected more frequently in immunocompromised patients because of higher circulating bacterial burden. Climate change has altered the epidemiology of tick-borne diseases, increasing their incidence and complicating diagnosis. This case highlights the importance of maintaining suspicion for multiple concurrent etiologies in immunocompromised patients with nonspecific presentations, remaining vigilant for ehrlichiosis in endemic regions, avoiding premature diagnostic closure, and pursuing a broad diagnostic evaluation.

71) MASKED INFLAMMATION, UNUSUAL ORGANISM: A DIAGNOSTIC AND MANAGEMENT CHALLENGE IN XANTHOGRANULOMATOUS PYELONEPHRITIS

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Clinical Vignette

Background: Xanthogranulomatous pyelonephritis (XGP) is a rare, destructive granulomatous renal infection marked by replacement of renal parenchyma with lipid-laden macrophages, arising from chronic obstruction and infection. It classically affects middle-aged women with obstructing nephrolithiasis and Proteus or E. coli infection, managed with nephrectomy given extensive parenchymal destruction. Atypical presentations, in demographics, inflammatory response, causative organisms, and management, are increasingly recognized and can complicate diagnosis and treatment.

Case Description: An 88-year-old man with stage IVA mantle cell lymphoma with active systemic involvement on obinutuzumab and pirtobrutinib, CKD stage 4, multifactorial pancytopenia, and atrial fibrillation presented with acute left flank pain and home fever to 104°F. His anticoagulation had previously been discontinued in 2024 following a perinephric hematoma. He also had a chronic obstructing left ureteral calculus, with prior urine cultures notable for Enterococcus faecalis and Escherichia coli. On arrival, he was afebrile and leukopenic, consistent with lymphoma-related bone marrow suppression rather than the leukocytosis typically seen in severe infection. CT demonstrated a 2-cm obstructing calculus with chronic parenchymal changes concerning for XGP. He was empirically started on ciprofloxacin, then broadened to piperacillin-tazobactam. Given his comorbidity burden, bleeding history, and poor surgical candidacy, he was managed with percutaneous nephrostomy drainage rather than nephrectomy. Urine culture from the nephrostomy tube grew Staphylococcus epidermidis, an organism not previously isolated in his urinary tract infections, and antibiotics were narrowed to daptomycin accordingly. His course was complicated by worsening anemia requiring transfusion and neutropenia treated with filgrastim. He was discharged with the nephrostomy tube in place to complete outpatient daptomycin therapy via an infusion center, with coordinated follow-up through hematology to resume lymphoma care, urology for nephrostomy tube exchange, and primary care for repeat labs.

Discussion/Conclusion: This case demonstrates that XGP can present well outside its classic demographic and clinical profile, and clinicians should maintain suspicion even in atypical hosts such as elderly men without the typical risk factors. Immunosuppression from underlying malignancy or its treatment may blunt the expected inflammatory response, masking disease severity and contributing to diagnostic delay when classic markers like leukocytosis are absent. The recovery of S. epidermidis, an organism more often dismissed as a contaminant or associated with catheter-related infection, also highlights the importance of tailoring antimicrobial therapy to culture data rather than relying on empiric coverage for typical uropathogens. Notably, diagnosis was based on clinical and radiologic grounds alone, without histopathologic confirmation, given the patient's poor candidacy for biopsy or nephrectomy. This case highlights that XGP may need to be managed presumptively in carefully selected high-risk patients when definitive tissue diagnosis cannot be safely obtained. Similarly, while nephrectomy remains the definitive management for XGP due to the extent of parenchymal destruction typically present, this case shows that percutaneous drainage combined with targeted antibiotics can achieve clinical stabilization as a viable alternative in patients for whom surgery carries prohibitive risk. Finally, as populations age and more patients present with multiple comorbidities and limited physiologic reserve, individualized, risk-adjusted approaches to managing XGP will become increasingly important in clinical decision-making.

72) SEPSIS RELATED TO BOWEL EDEMA

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Clinical Vignette

Introduction: Sepsis is a systemic inflammatory response to infection. The proper treatment of sepsis requires identification of a source of infection which can then be controlled so as to allow for the infection to be treated, making sepsis caused by an unclear source difficult to treat effectively.**Case:** A 72-year-old man with a past medical history of cirrhosis and hepatocellular carcinoma status post trans arterial chemoembolization 3 years prior to admission presented to the emergency room for refractory abdominal pain. On the day of admission, he was intubated due to increased respiratory burden due to compensation for severe metabolic acidosis with a clinical diagnosis of sepsis being made. He was started on empiric antibiotics and pressors and when blood cultures returned positive for pan-sensitive E. coli bacteremia, his antibiotics were adjusted accordingly; however, multiple follow-up cultures showed persistent bacteremia without clearance, and his antibiotics were escalated repeatedly with continued failure to clear. Due to refractory bacteremia, a comprehensive head-to-toe evaluation was performed to identify a source of infection. This revealed only the known hepatocellular carcinoma, unchanged from prior imaging, and bowel wall edema. Importantly, there was no evidence of hollow viscus perforation. Given the clinical presentation, bowel wall edema with subsequent bacterial translocation was considered the presumptive source of infection. However, diuresis was not feasible because of severe acute kidney injury (AKI) in the setting of refractory septic shock requiring ongoing vasopressor support. Consequently, continuous renal replacement therapy (CRRT) was initiated in the ICU, with escalating fluid removal over several days. This resulted in improved hemodynamic status and eventual clearance of the E. coli bacteremia. The patient was subsequently weaned off of pressors, extubated, and CRRT was discontinued when he was able to produce adequate urine. He was then stabilized and discharged to the floor from the ICU for treatment of his cancer.

Discussion: This case illustrates the importance of obtaining source control in patients with sepsis, as well as the utility of CRRT in patients with debilitating edema who have a concomitant AKI. Secondary lymphedema has been shown to suppress immune functioning1 and while bowel edema leading to bacterial translocation causing subsequent septic shock is rare, aggressive fluid removal, such as in this patient, can lead to source control and, subsequently, improved hemodynamic status.

References:

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73) STAYING IN THE GAME: INJURY PREVALENCE AND WARM-UP BEHAVIORS IN PICKLEBALL

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Research (Basic or Clinical)

Introduction: Pickleball participation has increased rapidly due to its accessibility, low barrier to entry, and strong social component. Regular participation offers benefits, including improved cardiovascular health, weight management, increased bone density, muscle maintenance, cognitive stimulation, and reduced social isolation. However, musculoskeletal injuries are common, likely due to frequent play, prolonged sessions, and ease of entry. Warm-up behaviors represent a possible strategy to reduce injury and support sustained participation. This project evaluated the prevalence and causes of pickleball-related injuries, as well as warm-up knowledge and behaviors, in a community setting.

Methods: A cross-sectional survey was conducted among adult pickleball players (n=112) recruited from three sites in Wausau, Wisconsin, in early 2025. Collected data included demographics, frequency/duration of play, warm-up beliefs/behaviors, and self-reported injury history. Descriptive statistics and Spearman rank correlations were used for analysis with significance set at $p<0.05$.This quality improvement initiative was reviewed by the MCW Institutional Review Board and determined to be exempt.

Results: Of 112 participants (48% female, 52% male), 66% had played for three or more years, 73% played two or more days per week, and 74% played two or more hours per session. Twenty-five percent reported no pickleball-related injuries, while 71% of those with an injury history reported two or more injuries. Knee and elbow injuries were most common, with overuse identified as the leading mechanism, followed by sudden changes in direction. A greater proportion of previously injured players reported warming up regularly compared to uninjured players (93% vs. 78%). Sixty-two percent believed warming up was very or extremely important, but only 45% felt confident or very confident in their warm-up knowledge. A weak but statistically significant correlation was observed between perceived importance of warming up and confidence in warm-up knowledge($\rho=0.24$, $p=0.016$). Strong correlations were found between importance and behavior ($\rho=0.62$, $p<0.001$) and confidence and behavior ($\rho=0.58$, $p<0.001$).

Conclusions: Pickleball-related injuries are common among recreational players, with knee and elbow injuries predominating. Although many participants recognize the importance of warming up, this belief does not consistently translate into behavior. Notably, players with a history of injury were more likely to warm up regularly, which may suggest that experiencing an injury has a stronger influence on behavior than perceived importance alone, though further research is needed to clarify this relationship. Future work should focus on implementing and evaluating brief, court-side warm-up interventions to potentially reduce injury risk.

74) AEROCOCCUS URINAE: A RARE URINARY TRACT BACTERIA PRESENTING AS SEPTIC ARTHRITIS, DISCITIS, AND EPIDURAL ABSCESS

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Clinical Vignette

Background: Aerococcus urinae is a gram-positive coccus that colonizes the genitourinary system. A. urinae presents clinically as a causative agent of urinary tract infections (UTIs), although it accounts for less than 1% of UTIs overall. It predominantly affects men older than sixty with pre-existing conditions such as diabetes, malignancy, and dementia. A. urinae has also been associated with isolated reports of infective endocarditis, spondylodiscitis, sepsis, peritonitis, aortitis, and perineal abscess. Studies demonstrate sensitivity to penicillin, cephalosporins, vancomycin, and nitrofurantoin.

Case: The patient is a 62-year-old male with a past medical history of type 2 diabetes mellitus and neurogenic bladder requiring self-catheterization who was admitted to the hospital for treatment of diabetic ketoacidosis. Due to initial complaints of lumbar back pain, a CT lumbar spine without contrast was performed, which showed no acute abnormalities.

During the admission, the patient developed left knee pain and swelling. There was no warmth, erythema, leukocytosis, or fever. Arthrocentesis was performed, and purulent synovial fluid was sent for analysis, which showed a cell count of 106,000/uL and a fluid neutrophil percentage of 97%. He underwent an incision and drainage, and a transthoracic echocardiography was performed, which showed no evidence of infective endocarditis.

A subsequent MRI of the lumbar spine demonstrated inflammatory changes at L4-L5 concerning for discitis and osteomyelitis, with a ventral epidural collection from L3 to the sacrum, suggestive of an abscess. Neurosurgery determined the abscess was inaccessible for drainage, and therefore medical management was pursued with IV vancomycin and cefepime per infectious disease recommendation.

Aerococcus urinae was identified via mass spectrometry of the synovial fluid. Antimicrobial therapy was narrowed to IV ceftriaxone for continued outpatient intravenous antibiotics. On chart review, it was found that five weeks prior to his admission the patient was treated with a five-day course of cefalexin 500 mg for a urinary tract infection secondary to culture-confirmed Aerococcus urinae.

Discussion: This is a case of a middle-aged male presenting in DKA who developed left knee septic arthritis, lumbar discitis, osteomyelitis, and a large ventral epidural abscess secondary to Aerococcus urinae, a rare bacterium from the genitourinary system. This patient has several of the previously identified demographic and clinical risk factors associated with Aerococcus urinae UTIs, including age greater than sixty, diabetes mellitus, and a history of urologic conditions.

However, this case is unique, as musculoskeletal infections, including septic arthritis, secondary to Aerococcus urinae are exceedingly rare. Furthermore, there was no evidence of a systemic infection at any point during his admission, including fevers, chills, leukocytosis, or positive blood cultures.

This case shows the importance of appropriate identification and treatment of Aerococcus urinae UTIs, especially in patients with associated risk factors. Research has shown that Aerococcus urinae is sensitive to penicillin, cephalosporins, vancomycin, and nitrofurantoin; therefore, these medications should be first line for A. urinae UTIs. If there are systemic complications such as musculoskeletal infections or infective endocarditis, extended IV antibiotics may be warranted for appropriate source control and to prevent recurrence.

75) ARTERIAL STRESS TEST TO IDENTIFY OPTIMAL BLOOD PRESSURE CONTROL IN OLDER ADULTS - REVISED

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Research (Basic or Clinical)

BACKGROUND: Hypertension (HTN) management in older adults primarily relies on resting brachial systolic blood pressure (SBP) alone, which overlooks dynamic vascular responses to physiologic stimuli. Resting measures may not fully capture the underlying vascular impairment or potential for adverse events. We sought to evaluate dynamic changes in arterial stiffness with acute exercise and pharmacological vasodilation in older adults with and without HTN.

METHODS: We enrolled 179 ambulatory, community-dwelling Veterans (≥ 60 years old) without known cardiovascular disease (CVD). Optimal blood pressure was defined as blood pressure of <130/80 mmHg. A 2-day "arterial stress test" evaluating responses to exercise on day 1 and sublingual nitroglycerin (NTG) on day 2 was completed. Incremental elastic modulus (IEM) and carotid to femoral pulse wave velocity (cfPWV) were measured at baseline and 10 minutes post-stimuli. Linear mixed effects models were performed to determine associations between arterial stiffness changes and blood pressure control.

RESULTS: Participants (70.3 ± 7.7 years old; 28% female) in the suboptimal group had higher SBP (144.5 ± 15.9 mmHg) compared to the optimal group (118.6 ± 13.3 mmHg). Arterial stiffness measures were higher in the suboptimal vs optimal group at baseline for both IEM (2664.0 ± 1062.1 mmHg vs 1880.8 ± 1025.9 mmHg) and cfPWV (9.1 ± 2.1 m/s vs 7.6 ± 1.7 m/s). Post exercise, SBP, IEM and cfPWV remained elevated in the suboptimal group during the recovery period (all models, $p<0.05$). Notably, post-NTG, SBP declined in both groups, yet IEM increased in the suboptimal control group (all models, $p<0.05$).

CONCLUSION: Hypertension is associated with abnormal dynamic arterial responses to physiological and pharmacological stress. Evaluating these dynamic responses beyond resting BP may better inform individualized SBP management and enhance cardiovascular risk stratification.

76) GREATER LEARNING ENVIRONMENTS FROM ANALYZING THE NARRATIVES OF STUDENTS (GLEAN)

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Quality Improvement / Patient Safety / High-value Care / Physician Well-being & Professional Fulfillment

Clinical Learning Environment (CLE) improvement has become increasingly prioritized in accreditation and overall educational program continuous quality improvement (CQI); however, institutions face challenges in translating learner feedback from CLE evaluations into actionable improvements for teachers and institutions. CLE report cards have demonstrated efficacy in informing institutional interventions aimed at promoting psychological safety for learners and organizational improvement for training sites. This project aims to integrate narrative reflections and quantitative survey data from MCW clerkship medical students into a CLE Report Card to guide faculty development and support CQI of clinical training sites. Reflections from clerkship medical students were downloaded en bloc and independently coded by our team using a previously established codebook consisting of 20 themes related to psychological safety. We applied these codes to identify rotations, role models, and behaviors that facilitated learner development. These codes were grouped into three domains based on Dr. Amy Edmondson's leadership tasks of psychological safety: Setting the Stage, Inviting Participation, and Responding Productively. Student reflections on the CLE can inform targeted interventions, recognize exemplary educational leadership, and guide faculty development to promote psychologically safe learning environments. At a subsequent stage of the project, these qualitative findings will be integrated with quantitative surveys, assessing belonging and mattering in clerkships, to create a comprehensive tool for CLE assessment. We plan to create a clinical report card for the MCW Department of Medicine to recognize strengths and identify potential areas for change for ongoing CLE CQI. By integrating learner experiences with quantitative measures of the CLE, this project intends to provide actionable insights, informed by learner perspectives, that support accreditation efforts, recognize educational leadership amongst faculty, and guide improvements in psychological safety across clinical training sites.


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