ACP American College of Physicians
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Nebraska Chapter

2025 Medical Student

Abstract Competition

October 8, 2025 via Zoom

Student Abstracts

Categories accepted:

Basic Research

Clinical Research

Clinical Vignette

Quality Improvement/Patient Safety

High Value Cost- Conscious Care

Abstract 1

Category Submitting for:
Clinical Vignette

Abstract Title
5-Fluorouracil (5-FU) Cardiotoxicity Presenting as Stress-Induced Cardiomyopathy

Limit the body of the abstract to be 500 words or less. Type single-spaced. For electronic submission, you do not need to stay within the borders. The abstract form does not accept graphs, charts, tables, etc.*

Introduction: Fluoropyrimidines such as 5-fluorouracil (5-FU) form the foundation of many chemotherapy regimens. 5-FU is the third most common chemotherapeutic agent in the treatment of solid malignancies worldwide, and balancing the potential benefits of therapy against the risks of drug-related toxicity is crucial when making decisions about treatment. 5-FU is the second most common chemotherapeutic drug associated with cardiotoxicity after anthracyclines. Cardiotoxicity can manifest as chest pain, acute coronary syndrome/myocardial infarction or death, although presenting signs and symptoms can be subtle.

Case Description: A 73-year-old male with a history of metastatic esophageal cancer, hypertension, type 2 diabetes, hyperlipidemia, and hypothyroidism presented with intractable nausea and vomiting following chemotherapy two days prior (trastuzumab, FOLFOX, pembrolizumab). FOLFOX includes folinic acid (leucovorin), fluorouracil (5-FU), and oxaliplatin. Despite outpatient antiemetic treatment (with dexamethasone, ondansetron, and prochlorperazine), the symptoms progressed, leading to hematemesis and atypical chest pain associated with retching. Initial evaluation revealed negative cardiac troponins, mild anemia, and electrolyte abnormalities, with EKG showing no acute ischemic changes but with possible 1 mm elevations in lead I at the J point without reciprocal changes. The patient's previous transthoracic echocardiogram before chemotherapy was unremarkable with an ejection Fraction (EF) of 60-65%. During admission, the patient was found to have rising troponins, mild left ventricular dysfunction (EF 45-50%), and new ST-T wave changes on ECG. Coronary angiogram confirmed non-obstructive coronary artery disease. At this point, clinical presentation aligned with stress-induced cardiomyopathy secondary to 5-FU chemotherapy toxicity. Immediate recommendations included a modified chemotherapy regimen with prophylactic calcium channel blockers and nitrates. Additional recommendations for future 5-FU treatment included extended-release nifedipine and isosorbide mononitrate 3-4 hours prior to the 5-

FU infusion, as needed short-acting diltiazem and sublingual nitroglycerin during infusions, and post-treatment calcium channel blockers and nitrates 12 and 24 hours after the first doses of these medications. After discharge, the patient remained under close monitoring for cardiac stability, chemotherapy-related adverse effects, and nutritional management, with ongoing involvement from oncology and cardiology teams. He successfully resumed cancer treatment with oxaliplatin, trastuzumab, and pembrolizumab. Repeat echocardiogram about two weeks later showed improvement in ejection fraction (55-60%).

Discussion: 5-FU cardiotoxicity may mimic acute coronary syndrome or Takotsubo cardiomyopathy. It should be suspected in any patient with chest pain during or after infusion. The incidence is approximately 1.2–18% and is more common with continuous infusion. ECG often shows transient ST elevations or T-wave changes, and cardiac enzymes may rise mildly. Angiography typically reveals non-obstructive coronary arteries, the mechanisms of this include vasospasm, direct endothelial toxicity, and oxidative stress. Early recognition of cardiotoxicity allows for chemotherapy modification and continued cancer treatment, and recurrence can be prevented with nitrates and calcium channel blockers. Collaboration between Oncology, Cardiology, and Pharmacy improves outcomes.

Abstract 2

Category Submitting for:
Clinical Vignette

Abstract Title
Acute Pericarditis Following Inactivated Influenza and COVID mRNA Booster Vaccines

Limit the body of the abstract to be 500 words or less. Type single-spaced. For electronic submission, you do not need to stay within the borders. The abstract form does not accept graphs, charts, tables, etc.*
A 29-year-old female with a past medical history of anxiety and seasonal allergies presented following 24 hours of acute chest pain. She had no recent symptoms of illness or changes except receiving her fourth COVID-19 vaccination and yearly inactivated influenza vaccine two days prior. She was febrile, hypertensive, and tachycardic upon arrival to the hospital. She described the pain as stabbing, and worse with inspiration and movement. Upon physical exam, distant heart sounds were noted, but she had no jugular venous distention, shortness of

breath, and lungs were clear to auscultation.
Initial lab work was significant for CRP of 42.60, white blood cell count of 14.4, and lactic acid of 2.1. Both high sensitivity troponins were negative. An ECG performed in the ED demonstrated sinus tachycardia with T wave abnormality and echocardiography showed a LVEF of 60-65%, elevated RVSP at 34 mmHg, and a moderate circumferential pericardial effusion. CTA chest was notable for a pericardial effusion, diffuse mediastinal and hilar adenopathy particularly on the right with some prominence in the anterior mediastinum which could be due to lymphadenopathy or thymic tissue. There was also an area of micronodularity which could be a consolidation vs. atypical infection. There was no evidence of pulmonary embolism, aneurysm, dissection, or typical findings of COVID-19. She was started on ceftriaxone, azithromycin, colchicine 0.26 mg twice daily, and aspirin 650 mg 3 times daily and she was transferred to a larger hospital for further monitoring. Her respiratory pathogens panel and COVID-19 PCR were both negative, and blood cultures showed no growth. The patient was switched from ceftriaxone and azithromycin to a five-day course of doxycycline for the pulmonary nodule found on the CTA chest to be further evaluated outpatient. Her symptoms rapidly improved with the initiation of colchicine and aspirin therapy and repeat echo showed no further development of the pericardial effusion or cardiac tamponade. She was discharged on a 14-day course of aspirin with follow-ups scheduled with cardiology, pulmonology, and her PCP.
Acute pericarditis has been described in younger patients who have tested positive for the COVID-19 virus, but acute pericarditis in the setting of the fourth mRNA vaccine is not well described in the current literature nor the inactivated influenza vaccine. Given this information, acute pericarditis associated with the COVID mRNA or inactivated influenza vaccines can be considered as a potential rare side effect in the absence of any other inciting events in otherwise healthy individuals.

Abstract 3

Category Submitting for:
Clinical Vignette

Abstract Title
Unexplained Portal Vein Thrombosis and Fever in a Returning Traveler: A Rare Case of Fusobacterium nucleatum Bacteremia

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electronic submission, you do not need to stay within the borders. The abstract form does not accept graphs, charts, tables, etc.*

Introduction

Fusobacterium nucleatum is an anaerobic, gram-negative bacillus that is part of the normal flora of the gastrointestinal tract and oropharynx. While more commonly associated with oropharyngeal infections, most notably Lemierre's syndrome seen in young adults, it has also been implicated in cases of septic thrombophlebitis. Gastrointestinal variants of Lemierre's syndrome involving F. nucleatum are rare presentations that offer diagnostically challenging patients. This patient vignette highlights a patient returning from international travel presenting with diarrhea and fever who, after extensive workup, was found to have F. nucleatum bacteremia with associated with portal vein thrombosis (PVT).

Case Description

A 69-year-old man with a history of type 2 diabetes and hypertension presented to the ED with several days of persistent fever, non-bloody diarrhea, and right upper quadrant abdominal pain following recent travel to Southeast Asia. Initial lab workup was remarkable for leukocytosis (19.9 x 10E3 cells/uL), elevated procalcitonin (1.47 ng/mL), transaminitis (alanine transaminase (ALT) 100 U/L, aspartate transaminase (AST) 56 U/L), elevated alkaline phosphatase (200 U/L), hyperbilirubinemia (1.7 mg/dL), and hyponatremia (132 mmol/L). Imaging revealed right-sided portal vein thrombosis. Stool studies showed a positive Clostridioides difficile antigen but negative toxin, and the patient was treated empirically with oral vancomycin. Despite therapy, the patient's fevers and diarrhea persisted. Additionally, repeat imaging demonstrated progression of the thrombus despite anticoagulation with Apixaban. Hypercoagulability testing was negative for malignancy as well as inherited coagulopathy. The patient became intermittently febrile with worsening leukocytosis (29.5 x 10E3 cells/uL), procalcitonin (4.53 ng/mL), and transaminitis (ALT 230 U/L, AST 181). The patient also had elevated erythrocyte sedimentation rate (67 mm/hr) and C-reactive protein (16.7 mg/dL). At this time, the patient was empirically started on Ampicillin, Doxycycline, and Metronidazole. An extensive infectious workup was negative for Histoplasma urine and serum antigen, Legionella urine antigen, Q fever antibody, Brucella antibody, Tularemia antibody, and tick-borne disease panel (Babesia, Anaplasma, Ehrlichia). Repeat blood cultures eventually grew Fusobacterium nucleatum after several days of anaerobic incubation. He was transitioned to IV antibiotics with ceftriaxone and metronidazole, which resulted in clinical improvement.

Discussion

This case represents an uncommon gastrointestinal manifestation of F. nucleatum-associated septic thrombophlebitis in the absence of a clear intra-abdominal source such as diverticulitis or appendicitis. While classic Lemierre's syndrome typically arises from head and neck infections, gastrointestinal variants can present subtly and may be mistaken for other infectious or various inflammatory conditions. Diagnosis is often delayed due to the organism's slow growth in anaerobic cultures and nonspecific symptom profile and imaging findings. Physicians should maintain a high index of suspicion for infectious pylephlebitis in patients with persistent fever, leukocytosis, and unexplained PVT. Early identification and treatment with prolonged antibiotics and anticoagulation are critical for preventing further complications.

Abstract 4

Category Submitting for:

Clinical Vignette

Abstract Title

A Tale of Two Histoplasma Prosthetic Joint Infections

Limit the body of the abstract to be 500 words or less. Type single-spaced. For electronic submission, you do not need to stay within the borders. The abstract form does not accept graphs, charts, tables, etc.*

Background

Fungal prosthetic joint infections (PJIs) are rare, representing approximately 1–3% of all cases—with 85% attributed to Candida species. Histoplasma capsulatum, a fungus primarily known for affecting the lungs with potential for dissemination, is an uncommon cause of PJI. Since the first reported case in 1998, only eleven cases of Histoplasma-associated PJI have been documented. We report two cases of Histoplasma PJIs and provide a literature review of reported cases.

Cases

A 65-year-old male with gastroesophageal reflux disease, Crohn's disease, rheumatoid arthritis, multiple deep vein thromboses, and pulmonary embolisms presented with right knee pain and anterior swelling following a revision right total knee arthroplasty (TKA) performed in 2023. Five years prior, in 2019, he developed hoarseness and shortness of breath after

cleaning his mice-infested camper and was diagnosed with a H. capsulatum infection of the larynx, treated with a four-month course of itraconazole. His knee pain and swelling persisted after the second revision of his right TKA, with synovial fluid cultures showing no bacterial growth. A fungal culture grew H. capsulatum 30 days post-operatively – histoplasma antibodies, but not antigens, were mildly elevated. He was treated with a planned 12-month course of itraconazole. His treatment was complicated by a deep vein thrombosis, which was likely related to drug interactions between itraconazole and warfarin, and multiple bacterial prosthetic joint infections after spacer exchanges and reimplantation.

The second case involves a 74-year-old female with a history of bilateral high tibial osteotomy and bilateral total knee arthroplasty (TKA), who began experiencing persistent left knee pain in late 2016. Imaging revealed tibial component loosening, prompting a left revision TKA in 2017, and intraoperative synovial tissue cultures grew Histoplasma capsulatum. She was initially treated with a therapeutic course of itraconazole, then transitioned to long-term suppressive therapy. Due to worsening diastolic heart failure and potential drug interactions, she was subsequently switched to fluconazole. She has not experienced further knee-related complications, and no alternative source of Histoplasma infection was identified.

Discussion & Conclusion

H. capsulatum infections in prosthetic joint infections (PJIs) present significant diagnostic challenges, especially with negative antigen tests and minimal antibody positivity, highlighting the importance of obtaining fungal cultures in specific patients. We present the first case of Histoplasma PJI as a distant site of infection after prior laryngeal disease, underscoring the potential for long-term persistence and reactivation and emphasizing the need for further research to optimize diagnosis and treatment strategies for these infections.

Both cases show variability of Histoplasma PJIs in presentation and management. Diagnostic delays are common, especially with negative antigen tests and low antibody levels, highlighting the need for fungal cultures. We report the first case of Histoplasma PJI as a distant infection after prior laryngeal disease, suggesting long-term persistence or reactivation. The second case was found incidentally during revision for presumed aseptic loosening, with one of five tissue cultures positive for H. capsulatum and no signs of infection. These cases highlight uncertainty about antifungal therapy, duration, and surgical approach, stressing the need for further research.

Abstract 5

Category Submitting for:
Clinical Vignette

Abstract Title
Atypical Presentation of Late-Onset Cardiac Sarcoidosis

Limit the body of the abstract to be 500 words or less. Type single-spaced. For electronic submission, you do not need to stay within the borders. The abstract form does not accept graphs, charts, tables, etc.*

Introduction:
Cardiac sarcoidosis is a rare inflammatory disease characterized by noncaseating granuloma formation within the myocardium. Clinical presentation is variable but may include symptoms of heart failure, conduction abnormalities, ventricular arrhythmias, or sudden death. Diagnosis is typically made through a combination of imaging and biopsy. This case highlights an uncommon presentation of a rare disease, emphasizing the importance of keeping cardiac sarcoidosis in the differential diagnosis while evaluating older adults with new-onset heart failure.
Case Description:
A 70-year-old man with a recent diagnosis of cardiac sarcoidosis and right-sided heart failure, made two months prior, presented to the emergency department with worsening dyspnea and bilateral leg swelling. Past medical history includes hypertension, coronary artery disease, ectopic atrial rhythm, and chronic kidney disease. He was admitted for diuresis and right heart catheterization to further evaluate the severity and etiology of heart failure.
Right heart catheterization revealed cardiogenic shock secondary to right ventricular failure, with a cardiac index of 1.17 L/m/m2 while on dobutamine (5 mcg/kg/min) and elevated right atrial pressure (13 mmHg). Transthoracic echocardiogram on admission revealed severe enlargement of right ventricle with a basal diameter of 5.2 cm, severe tricuspid regurgitation, and moderately reduced left ventricular ejection fraction (40-45%).
The diagnosis of cardiac sarcoidosis was made based on results of cardiac PET/CT showing a perfusion defect with corresponding increased FDG uptake in the interventricular septum and inferior heart wall. There were also hypermetabolic lymph nodes noted in the chest, further supporting the diagnosis of systemic sarcoidosis. The patient was started on a regimen of prednisone and mycophenolate for immunosuppression, along with sulfamethoxazole/trimethoprim, pantoprazole, and alendronate for management of sarcoidosis and prophylaxis. The patient was unable to tolerate guideline-directed medical therapy (GDMT) for heart failure due to hypotension.

Discussion:
Cardiac sarcoidosis typically presents between the ages of 30 and 60. Late-onset sarcoidosis, such as this case, is a recognized but uncommon presentation. Cardiac involvement in late-onset sarcoidosis is rare and may be underdiagnosed due to atypical presentations. Cardiac involvement usually progresses gradually to heart failure over months to years. The rapid progression in this case is highly atypical. This case highlights the importance of consideration of cardiac sarcoidosis as a diagnosis in older adults with unexplained heart failure or arrhythmias, and the importance of early intervention to limit progression and improve outcomes.

Abstract 6

Category Submitting for:
Clinical Vignette

Abstract Title
Secondary HLH following blood transfusion without identifiable trigger: a case report

Limit the body of the abstract to be 500 words or less. Type single-spaced. For electronic submission, you do not need to stay within the borders. The abstract form does not accept graphs, charts, tables, etc.*
Introduction:
Hemophagocytic lymphohistiocytosis (HLH) is a life-threatening condition characterized by persistent activation of cytotoxic T lymphocytes and natural killer (NK) cells, leading to excessive release of inflammatory cytokines resulting in widespread inflammation and multi-organ damage often mimicking septic shock. Familial HLH is typically driven by genetic mutations, whereas secondary HLH is triggered by external factors such as infection, malignancy, or autoimmune disease. Despite increasing awareness, secondary HLH carries a high mortality rate and remains underdiagnosed due to its variable and nonspecific presentation. We report a unique case of HLH in an adult who developed persistent fever following blood transfusion, in the absence of clear external triggers, and improved with HLH-directed therapy.
Case Description:
A 55-year-old male with a history of DVT, lymphedema, and treated hepatitis C presented with pancytopenia and neutropenic fever. Two months prior, he had been hospitalized for sepsis due to MSSA and streptococcal cellulitis requiring antibiotics. His hospital course was

complicated by severe AKI and rhabdomyolysis requiring hemodialysis. Six weeks later, pancytopenia prompted further evaluation, including bone marrow biopsy showing normocellular marrow with trilineage hematopoiesis with no evidence of malignancy.
Over two weeks, he received three units of packed red blood cells. After the third transfusion, he developed a fever lasting 48 hours, prompting transfer to our hospital. Infectious and autoimmune workups were negative. Laboratory studies revealed hypertriglyceridemia (332 mg/dl), elevated ferritin (4,677 ng/mL), increased soluble IL-2 receptor (2,915.5 pg/mL), and persistent pancytopenia. He met 6 of 8 HLH-2004 criteria, and his H-score exceeded the diagnostic threshold. HLH-directed therapy with dexamethasone and etoposide was initiated, resulting in rapid clinical and laboratory improvement. He was discharged in stable condition to continue a tapering steroid regimen and outpatient etoposide.
Discussion:
Secondary HLH is a challenging diagnosis due to its nonspecific presentation and overlap with sepsis, malignancy, and other inflammatory syndromes. This case is notable for HLH developing after a blood transfusion, without an identifiable malignancy, autoimmune condition, or active infection. Although febrile nonhemolytic transfusion reactions can occur, they typically resolve quickly and lack HLH-defining laboratory abnormalities. While the bone marrow biopsy did not demonstrate hemophagocytosis, this does not rule out HLH. It is possible that the patient's prior bacteremia contributed as a delayed trigger, or the blood transfusion induced immune dysregulation that ultimately triggered HLH.
To our knowledge, there are no reports describing adult-onset secondary HLH following blood transfusion alone. While rare, this case suggests transfusions may represent an underrecognized potential trigger for HLH in susceptible individuals. The timeline raises questions about the latency of prior infection that may result in immune activation, triggering an HLH state. Clinicians should maintain a high index of suspicion for HLH in patients with persistent fever, cytopenias, and inflammatory markers, even in the absence of typical triggers. Early diagnosis and treatment are critical for improved outcomes, as seen in this case.

Abstract 7

Category Submitting for:
Clinical Vignette

Abstract Title
Discovery of Interrupted Inferior Vena Cava with Azygous Continuation and Duplicated Superior Vena Cava During Catheter Ablation: A Case Report

Limit the body of the abstract to be 500 words or less. Type single-spaced. For electronic submission, you do not need to stay within the borders. The abstract form does not accept graphs, charts, tables, etc.*

Background: Congenital anomalies of the inferior vena cava (IVC) and superior vena cava (SVC) are individually uncommon and often asymptomatic, but they can have important clinical implications, particularly in relation to thromboembolic risk and challenges during interventional procedures. The co-occurrence of IVC interruption with azygos continuation and duplicated SVCs is exceedingly rare, with only one other case described in the English literature.

Case Description: We report the case of a 52-year-old female with a prior history of pulmonary embolism and present history of recurrent near-syncope, palpitations, and supraventricular ectopy. She presented for catheter ablation after persistent symptoms despite medical therapy. During femoral venous access, catheter advancement was complicated by atypical intracardiac electrograms and fluoroscopic findings suggestive of anomalous venous anatomy. The procedure was aborted, and computed tomography (CT) angiography revealed multiple venous anomalies, including (1) interrupted intrahepatic segment of the IVC with azygos continuation, with a markedly dilated azygos vein draining into the SVC; (2) duplicated SVCs, with the left SVC draining into a significantly enlarged coronary sinus; and (3) direct drainage of hepatic veins into the right atrium, with an accessory left hepatic vein emptying into the coronary sinus.

Discussion: The interrupted IVC with azygos continuation likely resulted from embryologic failure of fusion between the right subcardinal vein and the hepatocardiac channel, while persistent left SVC represented incomplete regression of the left cardinal system. These IVC and SVC anomalies are rare individually, with estimated population prevalences of 0.3–0.7% and 0.2–3%, respectively; their combination is exceptionally uncommon. Beyond rare embryologic and anatomic findings in this case, the patient's prior pulmonary embolism raises important clinical questions. Prior literature emphasizes the increased risk of deep vein thrombosis in patients with interrupted IVCs to due increased blood stasis in the lower extremities. Although azygos continuation can theoretically protect against pulmonary embolism by limiting lower extremity thrombus propagation, previous reports and this case suggest that patients remain susceptible to deep vein thrombosis and subsequent pulmonary embolism, likely due to upper extremity thrombus formation or embolization through the dilated azygos system.

Conclusion: This case illustrates the diagnostic and procedural challenges posed by a rare

and complex confluence of congenital venous anomalies. Interrupted IVC with azygos continuation and duplicated SVCs can significantly complicate femoral venous access, catheter navigation, and right atrial interventions. For radiologists and clinicians, it is important to recognize that these anomalies are not emergent findings but have significant clinical implications: they influence procedural safety, interpretation of imaging, and risk stratification for thromboembolic disease. Maintaining a high index of suspicion in patients with unexpected procedural findings or unexplained thromboembolic histories is critical. Pre-procedural imaging with CT or MR angiography in high-risk patients can facilitate accurate anatomical delineation and prevent complications.

Abstract 8

Category Submitting for:
Clinical Vignette

Abstract Title
Flecainide Induced Neutropenia

Limit the body of the abstract to be 500 words or less. Type single-spaced. For electronic submission, you do not need to stay within the borders. The abstract form does not accept graphs, charts, tables, etc.*
Abstract
Introduction
Flecainide is a class IC antiarrhythmic agent used primarily to treat narrow complex tachycardias such as atrial fibrillation and atrial flutter. It works by inhibiting fast inward sodium channels, thereby slowing conduction in the myocardium and maintaining sinus rhythm. Neutropenia as a side effect of flecainide has been reported in less than 1% of patients. We present a case of flecainide induced neutropenia in a patient with paroxysmal atrial flutter.

Case Description
A 54 year-old female with a past medical history of paroxysmal atrial fibrillation and atrial flutter, polymyositis, Raynaud's disease, and ulcerative colitis presented to the emergency department with palpitations. She was previously diagnosed with atrial flutter and was successfully cardioverted to normal sinus rhythm (NSR). An echocardiogram at that time showed preserved left ventricular function, and she opted for rate control only. Months later, she had recurrence of her atrial arrhythmia, and external monitoring showed persistent atrial

fibrillation. She was successfully cardioverted to NSR and was started on flecainide 50 mg BID in addition to metoprolol for rhythm control. She was later seen in the electrophysiology clinic and agreed to an ablation.

Prior to her scheduled ablation, she presented to the emergency room with palpitations. Electrocardiogram confirmed the patient to be in NSR with first degree AV block. Repeat echocardiogram showed a left ventricular ejection fraction of 57% with no wall motion abnormalities, mild-to-moderate tricuspid regurgitation, and a normal left atrial size. During her evaluation, she was found to have leukopenia with a white blood cell count of 2.6 k/uL and neutropenia with an absolute neutrophil count of 1.2 k/uL. Four months prior, her WBC was 6.5k/uL with an absolute neutrophil count of 4.4 k/uL. The patient was discharged with planned ablation in three weeks. Given that the flecainide would be discontinued post ablation, cardiology continued the patient's home dose of metoprolol XL and flecainide.

Discussion

This case highlights a rare but serious adverse hematologic reaction in which the use of flecainide induces neutropenia. Neutropenia has been reported in less than 1% of patients taking flecainide. The mechanism of flecainide induced neutropenia is not fully understood, however, it is hypothesized to either involve direct hematopoietic progenitor cell cytotoxicity or an immune response leading to neutrophil destruction. There are no current guidelines from major cardiology societies regarding the management of flecainide induced neutropenia. Standard clinical practice is to stop the drug and provide supportive care. Routine blood count monitoring should be considered in patients with hematologic risk factors for neutropenia or if patients develop unexplained fever or infection.

Abstract 9

Category Submitting for:
Clinical Vignette

Abstract Title
Metastatic Synovial Sarcoma of the Kidney: A Case Study

Limit the body of the abstract to be 500 words or less. Type single-spaced. For electronic submission, you do not need to stay within the borders. The abstract form does not accept graphs, charts, tables, etc.*
Case:

A 34-year-old male with a 10 pack-year smoking history presented to a hospital with right sided flank pain and 4 days of gross hematuria. CT scan showed a 9.8 x 9.2 x 10.7 cm renal mass and a hematoma. He underwent renal angiography with right renal artery embolization. CT scan 3 months later showed a large right posterior perinephric collection/mass of similar size with diagnosis favoring hematoma; later CT scans showed persistent right renal mass with cystic and solid components.

After 2 months, a biopsy was done, showing a poorly differentiated neoplasm negative for markers (e.g. desmin, CD34, and AE1/AE3) and positive for Ki67 of 34%. Findings favored Ewing Sarcoma.

After one month, the patient continued to have right flank pain. CT showed an enlarged right renal mass, resulting in subsequent nephrectomy. Pathology was negative for markers including CK7 and CK17 and positive with patchy reactivity for EMA H3K27me3, resulting in diagnosis of synovial sarcoma.

After nephrectomy, PET scan showed no avidity suggestive of metastases. Three months later, CT chest scan showed a paratracheal mediastinal mass. FNA biopsy of a right paratracheal lymph node and bronchoalveolar lavage showed metastatic synovial sarcoma. MRI of the lumbar spine showed right paraspinal and L1 and L2 vertebral body enhancement concerning for metastatic disease. He received stereotactic body radiation therapy (SBRT) to L1-L2 vertebral bodies and started on doxorubicin.

Over the following months, CT showed a growing right paratracheal mass. Patient was switched onto docetaxel/gemcitabine and later to pazopanib with radiation to the right upper paratracheal mass. He also underwent paracenteses for ascites with worsening abdominal pain and distension.

Later, he was hospitalized for hemoperitoneum and pneumonia with worsened AKI. CTs showed omental thickening and ascites suggestive of peritoneal carcinomatosis, confirmed with cytology of ascites fluid. Oncology and Palliative Medicine were consulted to discuss goals of care. The patient discharged home on hospice with considerations of outpatient immunotherapy, but soon transitioned to hospice.

Discussion:

Synovial sarcoma of the kidney is a rare type of synovial sarcoma comprising under one

percent of kidney tumors. Symptoms include abdominal and flank pain as well as hematuria. Workup consists of laboratory testing and imaging including CT and MRI scans. However, synovial sarcoma of the kidney is not associated with unique imaging findings, requiring diagnosis with core-needle biopsy. This is a challenge that was seen in our patient's case where his imaging showed findings that were suggestive of a hematoma, but later showed presence of a growing mass with cystic and solid components. Treatment involves surgical resection with nephrectomy, if possible, with considerations for neoadjuvant chemotherapy and radiation treatment depending on tumor aggressiveness and size. Chemotherapy includes anthracyclines, gemcitabine, pazopanib, and more. Radiation can consist of neoadjuvant external beam radiation treatment (EBRT) for aggressive, large tumors or SBRT for advanced disease or palliative treatments. For this case, our patient highlights the difficulty of identifying and treating renal synovial sarcoma as well as workup and management for this rare condition.

Abstract 10

Category Submitting for:
Clinical Research

Abstract Title
Pre-existing atrial fibrillation subtypes and relationship to postoperative cardiovascular outcomes after non-cardiac surgery

Limit the body of the abstract to be 500 words or less. Type single-spaced. For electronic submission, you do not need to stay within the borders. The abstract form does not accept graphs, charts, tables, etc.*
Introduction: Standard perioperative risk assessments such as the revised cardiac risk index (RCRI) and American College of Surgeons National Surgical Quality Improvement Program (NSQIP) database do not include atrial fibrillation (AF) as a risk factor in the calculation for adverse events following non-cardiac surgery. Recent data suggest that preoperative AF was associated with a higher incidence of stroke, heart failure, and mortality, but with a paradoxical lower risk of myocardial infarction. The impact on postoperative outcomes stratified by the type of AF whether paroxysmal, persistent, or chronic has not been evaluated.
Methods: To explore the relationship between preoperative AF and adverse events, the National Readmissions Database (NRD) was used to identify hospitalizations in which the patient was admitted for non-cardiac surgery from 2016 to 2022. AF was categorized into three subtypes (paroxysmal, persistent, and chronic) and propensity scores were estimated

to provide inverse probability of treatment weights (IPTW) that balanced the AF subtypes. It was then determined whether in-hospital mortality, length of stay (LOS), and 30-day readmission (all cause, acute myocardial infarction (AMI), heart failure, and ischemic stroke) differed significantly between the different subtypes of preoperative AF. Finally, to validate this analysis and confirm that paroxysmal AF had worse outcomes than non-AF, outcomes of hospitalizations of patients over the age of 65 with paroxysmal AF versus no AF were compared.
Results: IPTWs achieved excellent covariate balance as evidenced by near-zero standardized mean differences across all covariates. The type of preoperative AF demonstrated significant differences: patients with paroxysmal AF had 22% lower adjusted odds of in-hospital death than persistent AF (adjusted odds ratio [aOR]: 0.78, 95% CI: 0.75-0.81), and 11% lower adjusted odds of in-hospital death than chronic AF (aOR: 0.89, 95% CI: 0.87-0.91). These findings had interactions with biological sex (interaction p=0.039) such that males with paroxysmal AF had 20% lower adjusted odds of in-hospital mortality than males with persistent AF (aOR: 0.80, 95% CI: 0.76-0.84), whereas females with paroxysmal AF had 25% lower adjusted odds of in-hospital mortality than females with persistent AF (aOR: 0.75, 95% CI: 0.71-0.79). The odds of all-cause 30-day readmission did not differ significantly between the subtypes of preoperative AF, but the odds of AMI, heart failure, and ischemic stroke did. In particular, paroxysmal AF had a 31% higher adjusted odds of an AMI readmission than persistent AF (aOR: 1.31, 95% CI: 1.08-1.59), and paroxysmal AF also had a 16% lower adjusted odds of a heart failure readmission than chronic AF (aOR: 0.84, 95% CI: 0.81-0.87). Finally, paroxysmal AF had 39% higher adjusted odds of in-hospital mortality than no AF (aOR:1.39, 95% CI:1.36-1.42), and 27% higher odds of all-cause 30-day readmissions than no AF (aOR: 1.27, 95% CI: 1.26-1.29).
Conclusion: Paroxysmal AF is associated with better postoperative cardiovascular outcomes and mortality compared to both persistent and chronic AF. Paroxysmal AF is also associated with worse outcomes than no AF.

Abstract 11

Category Submitting for:
Clinical Vignette

Abstract Title
Enteric/Typhoid Fever in a Returning Traveler: an Approach to a Thorough Medical Workup

Limit the body of the abstract to be 500 words or less. Type single-spaced. For electronic

submission, you do not need to stay within the borders. The abstract form does not accept graphs, charts, tables, etc.*

Up to 70% of travelers to low-income regions experience health complications, most of which are self-limiting. However, 8% to 15% require medical evaluation either during travel or upon return, with fever frequently reported as a primary symptom. As such, the importance of a thorough medical workup in a returning traveler with fever cannot be overstated, as it may be the first sign of a potentially serious or infectious disease acquired abroad. In this case, a 53 year old female patient returned from Pakistan after several months of travel. Upon returning home, she began experiencing moderate to severe fevers. She was given a course of Augmentin by her primary care provider. Her fever abated for two weeks only for her symptoms to return. Four weeks after the course of Augmentin, and after an ER visit and an ID consultation, blood culture results showed that the patient had contracted Salmonella. Her history of travel to Pakistan raised suspicion for multidrug resistant Salmonella (XDR Salmonella). After susceptibility testing it was determined that the pathogen was susceptible to trimethoprim-sulfamethoxazole. She was discharged on oral therapy. Had a broad/standard workup of fever in a returning traveler been in place, the patient's time infected may have been reduced by 4-6 weeks. Thus, in a returning traveler with fever, high risk pathogens to be concerned for include Malaria, Dengue, Chikungunya, Leptospiral, typhoid, and others. It is incredibly important to narrow your differential, which will guide your treatment. This can be done through a comprehensive history, including general medical history as well as specific traveling areas, foods eaten, activities performed and others. Initial laboratory testing should include a complete blood count (CBC), comprehensive metabolic panel (CMP), a peripheral blood smear, and blood cultures. Doing these things offers a systematic approach to narrowing your differential and guides your treatment.

Abstract 12

Category Submitting for:
Clinical Vignette

Abstract Title
When the Smoke Clears: Navigating Pneumonitis and Barotrauma after Crack Cocaine Use

Limit the body of the abstract to be 500 words or less. Type single-spaced. For electronic submission, you do not need to stay within the borders. The abstract form does not accept graphs, charts, tables, etc.*
Introduction
The inhalation of cocaine can trigger a range of acute pulmonary complications including bronchospasm, pneumothoraces, pulmonary infarction, eosinophilic lung disease, and diffuse alveolar hemorrhage. Injury mechanisms include direct pulmonary toxicity, hypersensitivity reactions, and barotrauma. Radiographic findings may appear severe even when symptoms are mild. Pneumomediastinum and pneumopericardium are rare but

potentially severe complications, often resulting from alveolar rupture during coughing or emesis. Many of these inhalation injuries also predispose patients to secondary bacterial infections, which further complicates evaluation and management. Distinguishing inflammatory from infectious etiologies is a key challenge in guiding antimicrobials, corticosteroids, and invasive diagnostics.

Case Description

A previously healthy 32-year-old man presented with two days of chest pain, dyspnea, and vomiting following first-time inhaled cocaine use. He reported cough, diarrhea, and night sweats but denied fever or hemoptysis. On presentation, he was mildly tachypneic, afebrile, and stable on room air with an oxygen saturation of 97%. Exam revealed chest wall tenderness and palpable cervical crepitus.

Laboratory testing was notable for WBC 18.0 with ANC 15.2, procalcitonin 2.24, and initial high-sensitivity troponin 114 with a negative delta. EKG showed normal sinus rhythm. CT angiography revealed pneumomediastinum, pneumopericardium, subcutaneous emphysema, and diffuse bilateral perihilar opacities sparing the pleura.

Empiric vancomycin, piperacillin-tazobactam, and fluconazole were initiated for possible esophageal perforation. Antimicrobials were later narrowed to ceftriaxone and azithromycin for community-acquired pneumonia coverage after barium esophagram showed no evidence of perforation. Pulmonology suspected hypersensitivity pneumonitis or eosinophilic pneumonia from cocaine inhalation and attributed his mediastinal findings to barotrauma. Bronchoscopy was considered to confirm the diagnosis, but was deferred in favor of a corticosteroid trial. The patient received prednisone 40 mg daily for five days, followed by 20 mg daily for five days. He improved without oxygen requirement and was discharged on oral amoxicillin-clavulanate, azithromycin, and the remainder of his steroid taper, with plans for repeat CT in 3 months and pulmonology follow-up.

Discussion

This case highlights the nuanced approach required when evaluating cocaine-related lung injury in general internal medicine. The differential for diffuse pulmonary opacities after inhalation includes hypersensitivity pneumonitis, eosinophilic pneumonia, acute pulmonary edema, and diffuse alveolar hemorrhage. Our patient's rapid improvement with corticosteroids supports an inflammatory process rather than an infectious one, though his elevated procalcitonin and imaging findings warranted empiric community-acquired pneumonia coverage until infection could be reasonably excluded. Barotrauma likely resulted from increased intra-alveolar pressures during coughing or emesis and required monitoring but no surgical intervention.

Bronchoscopy can aid in diagnosis, assessing for alveolar hemorrhage, and identifying eosinophilia. Its yield is highest in cases without clear improvement, in immunocompromised patients, or when there is diagnostic uncertainty. In this instance, the decision to defer bronchoscopy avoided unnecessary procedural risk while still allowing for close clinical monitoring and outpatient follow-up with repeat imaging.

Conclusion

Early recognition and careful differentiation between inflammatory and infectious causes in cocaine-related lung injury are critical for guiding appropriate therapy and minimizing invasive procedures. Multidisciplinary collaboration and close follow-up ensure safe management of barotrauma and promote full recovery without complications.

Abstract 13

Category Submitting for:
Clinical Research

Abstract Title
Two Cusps, One Lifelong Journey: Long-Term Insights into Pediatric BAV

Limit the body of the abstract to be 500 words or less. Type single-spaced. For electronic submission, you do not need to stay within the borders. The abstract form does not accept graphs, charts, tables, etc.*

Introduction: Bicuspid aortic valve (BAV), the most common congenital heart defect, affects approximately 1% of the general population. As seen in Figure 1, in childhood, BAV often leads to aortic stenosis or regurgitation, necessitating early palliation and later definitive valve interventions. This study, which is crucial for advancing our understanding and improving patient outcomes, aims to compare the long-term functional outcomes and complications of various surgical approaches, with a particular focus on the Ross procedure versus other valve repairs or replacements, in individuals with childhood BAV and aortic stenosis.

Methods: A retrospective cohort analysis was conducted to evaluate morbidity and mortality associated with various definitive surgical repairs for BAV-related aortic stenosis. A multivariate analysis was also performed to assess adverse outcomes and comorbidities, which made patients more susceptible to the intervention. The study's primary focus was on adult functional status following interventions in infancy or early childhood, making it particularly relevant to your practice. The study also evaluated long-term outcomes, including surgical complications, endocarditis, and the need for repeat procedures.

Results: Clinical evidence indicates that all surgical approaches for BAV in childhood have high rates of repeat intervention, as shown in Figure 2. However, the Ross procedure, with its potential to reduce the burden of surgical complications and endocarditis, is associated with lower odds of long-term composite adverse outcomes. Unplanned surgeries involving the left ventricular outflow tract (LVOT) were required in 48 of 95 patients (51%). This included 22 of 55 patients (40%) who had initially undergone a Ross procedure, 12 of 14 patients (86%) with an initial tissue valve, 6 of 13 patients (46%) with an initial mechanical valve, and 8 of 14 patients (57%) with an initial valve repair. The difference in reoperation rates among groups was statistically significant ($p = 0.02$).

Conclusion: While repeat surgical procedures are standard in childhood BAV interventions, the Ross procedure is associated with better long-term outcomes, including reduced complication rates and improved adult functional status. These findings support considering the Ross procedure as a preferred definitive surgical approach in selected pediatric patients.

Abstract 14

Category Submitting for:
Clinical Vignette

Abstract Title
A Curious Clot Case Report: Lemierre Syndrome

Limit the body of the abstract to be 500 words or less. Type single-spaced. For electronic submission, you do not need to stay within the borders. The abstract form does not accept graphs, charts, tables, etc.*
A 30-year-old female presented with a week-long history of fever, shortness of breath, neck pain and swelling. CT imaging revealed partial occlusion of the left internal jugular vein with thrombus extension into the sigmoid and transverse sinuses. She was admitted to the intensive care unit on intravenous (IV) ampicillin/sulbactam and heparin. Infectious Disease was consulted for antibiotic guidance with blood cultures growing Streptococcus pyogenes.

She clinically stabilized permitting transfer to the floor. Despite antibiotic treatment, lateral neck swelling persisted, and examination revealed dental caries with abscesses. Ear Nose and Throat (ENT) surgeons recommended incision and drainage based on repeat imaging with progressive soft tissue swelling, stranding, and mass effect in the left lower neck causing deviation of the trachea. Antibiotic coverage was expanded to Linezolid. An episode of chest pain, with troponins peaking at 3,253, resulted in an unremarkable left heart catheterization. She was determined to have new onset myopericarditis without evidence of obstructive coronary artery disease. Source control with drain placement improved her condition and allowed for transition from heparin to apixaban and antibiotic de-escalation to IV ampicillin monotherapy.

Drain removal occurred on day ten, after which the patient was transitioned to oral amoxicillin. She discharged with follow-up to ENT, Cardiology, and Family Medicine. The length of admission was thirteen days. Medications on discharge included apixaban 5mg twice daily for 3 months and amoxicillin 1g every 8 hours for a total of 4 weeks.

The incidence of Lemierre Syndrome is increasing. Whether this rise is due to fewer prolonged antibiotic courses, antibiotic resistance, or a decrease in tonsillectomies is yet to be elucidated. The syndrome was first described by Andrew Lemierre in 1936 with his paper in The Lancet. He noted a syndrome of neck swelling, high fever, and devastating mortality affecting young adults typically caused by Bacillus funduliformis although other bacteria were occasionally found. It would later be determined that the most common sources are (in order of incidence): Fusobacterium necrophorum, Fusobacterium nucleatum, and anaerobic Streptococci, Staphylococci, and Klebsiella. Case reports of S. pyogenes in Lemierre syndrome are limited; a majority of cases reported in young adults with rare occurrences in the elderly and children.

Prompt diagnosis is imperative to successful treatment and resolution. A characteristic finding of Lemierre Syndrome is the persistence of lateral neck swelling after the initiation of antibiotics rather than self-limited pharyngitis. Standardized treatment is hindered by a lack of consensus for antibiotic and supportive care recommendations. Meta-analyses and case reports lean in favor of aggressive, broad-spectrum antibiotics prior to definitive diagnosis or susceptibility testing. Severe cases involving clotting into the sigmoid or cavernous sinuses as well as the presence of septic emboli necessitate the addition of anticoagulation. Currently, there is no agreement on when to initiate therapy, which

medications to use, and therapeutic dosing for antibiotics or anticoagulation. The successful outcome of this complex case rests on the prompt recognition of Lemierre Syndrome, involvement of specialists, and the use of broad-spectrum antibiotics with prolonged anticoagulation in the setting of an atypical bacterial source.

Abstract 15

Category Submitting for:
Clinical Vignette

Abstract Title
Volume Overload Mimicking Atrial Septal Defect: Clarification After Fluid Optimization in a Hemodialysis-Dependent Patient Using Off-Label Semaglutide

Limit the body of the abstract to be 500 words or less. Type single-spaced. For electronic submission, you do not need to stay within the borders. The abstract form does not accept graphs, charts, tables, etc.*
Background: In patients with large volume shifts, right-sided dilation can distort interatrial septal anatomy and mimic structural defects on imaging.

Case Presentation: We describe a dialysis-dependent 75-year-old male with atrial fibrillation, coronary artery disease, and failed peritoneal dialysis who underwent incidental CT chest for surveillance of thoracic aortopathy following coronary artery bypass grafting. At the time of imaging, he was markedly volume overloaded with interdialytic weight gains of 10–15 liters and 3+ lower extremity edema. CT suggested a large atrial septal defect (ASD) along with pulmonary artery enlargement and moderate left atrial dilation. Because his fluid control was poor, off-label semaglutide was initiated to reduce appetite and interdialytic gains. Over the next month, oral intake decreased, dry weight targets were lowered, and hemodynamic status improved. Approximately two weeks after the CT, he was contacted to schedule a cardiac MRI for ASD evaluation. This prompted significant anxiety, and he presented to clinic with hypotension and dyspnea, ultimately attributed to an atypical panic attack. At the time, this episode was not recognized as panic; instead, he was admitted for evaluation of hypotension and symptoms in the context of a suspected new ASD. Two days later, inpatient contrast transthoracic echocardiography demonstrated improved left ventricular systolic function (EF 50–55%, up from 44% the prior fall), mild-to-moderate mitral regurgitation, mild right ventricular dilation, and a patent foramen ovale (PFO) with right-to-left shunting—clarifying that the CT finding represented transient septal stretch from volume overload rather than a fixed defect. In retrospect, the acute presentation met clinical criteria for a panic attack, likely exacerbated by anxiety over additional testing. Persistent exertional dyspnea was attributed to relative hypotension from newly achieved dry weight and deconditioning rather than heart failure or pulmonary congestion.

Discussion: This case illustrates how volume status can confound structural cardiac imaging, and the importance of reassessing suspected interatrial defects after achieving euvolemia. This case also explores the utility of prescribing semaglutide for volume management in dialysis patients with excess interdialytic fluid weight gains.

Abstract 16

Category Submitting for:
Clinical Research

Abstract Title
Geographic Trends of Bipolar Affective Disorder Related Mortality

Limit the body of the abstract to be 500 words or less. Type single-spaced. For electronic submission, you do not need to stay within the borders. The abstract form does not accept graphs, charts, tables, etc.*
Geographic Trends of Bipolar Affective Disorder Related Mortality
Mustafa Beidas, Sowmya Kolluru, Olivia Foley, Rajesh Tampi M.D., Abubakar Tauseef M.D.
Creighton University School of Medicine, Omaha, Nebraska

Introduction: Bipolar Affective Disorder (BPAD), in addition to posing a clinical challenge, remains a leading cause of global disability and a major cause of early mortality. Our study aims to characterize the geographic trends in BPAD related mortality using the CDC Wonder database.
Methods: The CDC Wonder database was utilized to collect data on the mortality burden in the United States from 1999-2023. Data was stratified by rural or urban designation and census region. Data analysis was performed using Join-point analysis to help determine trends as well as statistical significance.
Results: When comparing rural and urban areas, our study found that the age adjusted mortality rate was significantly higher in rural areas in comparison to urban areas. For census regions, throughout our study period each census region saw an increase in age adjusted mortality rate. The Midwest had the highest age adjusted mortality rate of the four regions. The West had the second highest mortality from BPAD, followed by the South and Northeast regions, respectively.
Conclusions: Our study expands on prior research related to trends in mortality of BPAD and aims to highlight the disproportionate mortality burdens related to BPAD as a potential guide towards future management strategies. Further studies examining the utilization of mental health resources, including telehealth, and a focus on the destigmatization of mental health can be useful to guide mental health practices in the future.

Abstract 17

Category Submitting for:
Clinical Research

Abstract Title
Feasibility of Ecological Momentary Assessments of Physical Activity and Symptom Burden in Older Adults with Chronic Kidney Disease

Limit the body of the abstract to be 500 words or less. Type single-spaced. For electronic submission, you do not need to stay within the borders. The abstract form does not accept graphs, charts, tables, etc.*
Objective/Hypothesis: Physical inactivity causes cardiovascular death, frailty, and disability. Existing literature and our

prior pilot data demonstrate that many older adults with chronic kidney disease (CKD) remain sedentary and face a high burden of physical and emotional symptoms that impede frequent physical activity. Existing physical activity interventions in CKD rely on self-reported measures of physical activity and are not grounded in principles of behavioral science. As a result, existing physical activity interventions are impeded by participant drop-out. Just-In-Time Adaptive Interventions (JITAIs) provide real-time feedback to promote behavior change in accordance with a participant's environmental context. These interventions rely on real-time, ecological momentary assessments of symptom burden and motivation that may change in accordance with a participant's environment. In a formative step towards designing a JITAI for older adults with CKD that addresses existing gaps in physical activity interventions, we tested the feasibility of wearable physical activity monitors and mobile ecological momentary assessments of pain, fatigue, mood, and motivation. We hypothesized that physical activity monitors and ecological momentary assessments would be feasible and acceptable to participants.
Approach: We conducted a one-week, prospective, observational study among adults over age 60 with Stage 3B-5 CKD (K23DK129774). Participants were asked to wear an Actigraph GT3X physical activity monitor (all day; Days 1-7) and respond to ecological momentary assessments of mood and motivation (twice a day; Days 5-7) sent to their mobile devices. Ecological momentary assessments consisted of single item measures of pain, fatigue, mood, and motivation. Feasibility and acceptability were quantitatively measured using the Feasibility of Intervention Measure (FIM; score 1-5 on each of 4 items) and Acceptability of Intervention Measure (AIM; score 1-5 on each of 4 items) and qualitatively explored using telephone interviews. Descriptive statistics were used to report results.
Results: Seven-day accelerometer adherence rate was 90.9% (N = 22). Accelerometer data revealed that participants were sedentary overall, with a median daily step count of 6178 steps, and were most active between 10:00 AM – 2:00 PM. Mean survey completion rate was 73.0% (N= 22). Overall, participants had low symptom burden (median pain score: 2/5; median fatigue score: 2/5) and overall positive mood (median mood score 13/15). Participants who responded found wearable devices and mobile assessments feasible and acceptable (N = 22). Quantitatively, over 80% of participants reported 'agree' or 'strongly agree' on each item of the AIM and FIM, indicating high feasibility and acceptability.
Conclusions: Wearable devices that offer real-time monitoring and bi-directional participant input are feasible for and acceptable to older adults with CKD. Our conclusions should be interpreted in the context of our small sample size.

Abstract 18

Category Submitting for:
Clinical Vignette

Abstract Title
A Movement Disorder in the Setting of Recurrent Diabetic Ketoacidosis

Limit the body of the abstract to be 500 words or less. Type single-spaced. For electronic submission, you do not need to stay within the borders. The abstract form does not accept graphs, charts, tables, etc.*
Introduction:

Diabetic striatopathy is a rare complication of uncontrolled diabetes, occurring in approximately 0.16% of patients with elevated HbA1c who undergo neuroimaging. This condition is characterized by hyperkinetic movements and distinctive neuroimaging findings. This condition classically presents in elderly Asian women with uncontrolled type 2 diabetes and nonketotic hyperglycemia. Cases in patients with type 1 diabetes and in the setting of diabetic ketoacidosis (DKA) are less frequently described. Recognition of this entity is crucial, as treatment strategies differ from other causes of abnormal movements.

Case Description:

A 55-year-old Asian woman with cachexia, alcohol use disorder, and type 1 diabetes mellitus secondary to chronic pancreatitis complicated by recurrent DKA presented in DKA after discontinuing insulin due to psychosocial stressors and depressive symptoms. After receiving treatment for DKA, she endorsed several months of cramps and movements of her left extremities. Upon further investigation, she clarified these as involuntary, uncontrollable, abnormal movements. On exam, these movements were noticed to be non-voluntary flexion of the left elbow and wrist with periodic extension and left wrist circumduction. Additionally her left foot was in plantar flexion.

She was first prescribed cyclobenzaprine and gabapentin for presumed musculoskeletal pain/cramps. Psychiatry was also consulted given her use of olanzapine for appetite stimulation, raising concern for tardive dyskinesia. Olanzapine was discontinued; however, the movements persisted and were not fully consistent with tardive dyskinesia. Neurology was consulted and recommended a brain MRI with and without contrast due to presence of hemichorea. Imaging revealed T1 hyperintensity within the right putamen, consistent with diabetic striatopathy.

The patient was managed with correction of hyperglycemia, education, and stabilization of her diabetes. An atypical antipsychotic was restarted during the hospitalization for appetite stimulation and possible benefit in diabetic striatopathy. Symptomatic therapy with dopamine-blocking agents such as haloperidol or olanzapine may be considered in refractory cases, although evidence is limited.

Discussion:

This case highlights an uncommon manifestation of diabetes, underscoring the importance of maintaining a broad differential when evaluating movement disorders. Diabetic striatopathy can be mistaken for tardive dyskinesia, stroke, or structural basal ganglia lesions. MRI typically demonstrates unilateral striatal T1 hyperintensity, which helps distinguish it from alternative diagnoses.

While the underlying pathophysiology of diabetic striatopathy is not fully understood, the majority of cases respond to glycemic optimization. Proposed mechanisms involve metabolic disturbance and microvascular ischemia within the basal ganglia. The role of antipsychotic or antidopaminergic agents remains uncertain and should be reserved for patients with persistent symptoms despite glycemic control. Our patient's presentation in the context of type 1 diabetes and DKA emphasizes that this condition is not limited to type 2 diabetes or nonketotic hyperglycemia, broadening awareness for clinicians.

Abstract 19

Category Submitting for:
Clinical Vignette

Abstract Title
Acute Pancreatitis Following Semaglutide Resumption

Limit the body of the abstract to be 500 words or less. Type single-spaced. For electronic submission, you do not need to stay within the borders. The abstract form does not accept graphs, charts, tables, etc.*

Semaglutide (Ozempic) and other GLP-1 agonists have gained notoriety in recent years in the treatment of type 2 diabetes and to promote weight loss. While generally well-tolerated, acute pancreatitis is a rare but established adverse effect that warrants examination.

A 47-year-old male with a past medical history of hypertension, hyperlipidemia, type 2 diabetes, and obesity (BMI 36.8) presented to an outside facility after one week of intractable nausea, vomiting, and diarrhea. His symptoms began shortly after restarting semaglutide at an unknown higher dose following a several-month hiatus due to prescription issues. He reported dozens of episodes of emesis and diarrhea with associated mild abdominal discomfort. After noticing slurred speech and two syncopal episodes, his wife brought the patient to the emergency department (ED) for evaluation.

In the ED, he was hypotensive (60s/40s) and confused with various electrolyte abnormalities. Laboratory evaluation revealed severe hyponatremia (Na 120 mmol/L), hypokalemia (K 2.7 mmol/L), acute kidney injury (creatinine 6.22 mg/dL), elevated lipase (3,494 U/L), and an anion gap metabolic acidosis. Due to persistent severe hyponatremia, he was transferred to our hospital for a nephrology consult and close monitoring. Upon transfer, his clinical picture was further complicated by vasodilatory shock requiring norepinephrine for blood pressure support. A repeat lipase was 539 U/L, and an abdominal ultrasound showed acute interstitial pancreatitis without gallstones. He was managed with supportive therapies for acute pancreatitis, including aggressive fluid resuscitation with Lactated Ringer's solution and early oral feeding as tolerated. His condition gradually improved over the course of 2 to 3 days. He was advised at discharge on the importance of pe rmanently discontinuing the semaglutide.

This case illustrates how GLP-1 receptor agonists may precipitate acute pancreatitis with complications including shock, electrolyte abnormalities, and renal failure from acute inflammation and microcirculatory dysfunction. The absence of other etiologies, such as alcohol use or gallstones, supports semaglutide as the likely precipitating factor of acute pancreatitis in this patient. Physicians should be aware of the possibility of the development of acute pancreatitis in patients using GLP-1 receptor agonists, particularly when initiating or increasing doses.

Abstract 20

Category Submitting for:
Clinical Vignette

Abstract Title
When Textbook Signs Aren't Visible: Superior Vena Cava Syndrome Presenting with Recurrent Syncope in a Black Male

Limit the body of the abstract to be 500 words or less. Type single-spaced. For electronic submission, you do not need to stay within the borders. The abstract form does not accept graphs, charts, tables, etc.*
Introduction:
Superior Vena Cava (SVC) Syndrome results from obstruction of blood flow through the SVC, leading to venous congestion of the head, neck, and upper extremities. Medical education commonly emphasizes hallmark features like facial plethora, erythema, and venous distension. However, visual cues like redness and discoloration may be more difficult to appreciate or absent in patients with darker skin tones, potentially delaying recognition. Early recognition and diagnosis are critical to prevent life-threatening complications from SVC syndrome, including cerebral edema, airway compromise, and syncope. This case highlights how skin pigmentation can obscure textbook findings of SVC syndrome, prompting heightened clinical vigilance when evaluating patients across diverse skin tones.

Case Description:
A 45-year-old Black male with a history of gastroesophageal reflux disease (GERD), asthma, and depression presented to a free, student-run health clinic following a syncopal episode that caused a motor vehicle accident. The patient reported recurrent syncopal episodes for the past eight months. These events were preceded by prodromal symptoms, including lightheadedness, nausea, transient vision loss, and a sensation akin to intoxication. He also described progressive swelling of his face, neck, and upper chest, accompanied by headaches, dyspnea, cough, and voice changes. Symptoms were position-dependent and exacerbated by Valsalva maneuvers, exertion, stress, and showering. The severity and frequency of syncopal episodes began to compromise his safety whilst driving, so he presented for medical evaluation.

On physical examination, the patient was visibly uncomfortable and preferred sitting upright with his neck flexed to the right. Distended neck veins were observed at 45 degrees and venous collaterals were prominent across the upper abdomen. His voice was hoarse and effortful. Cardiovascular examination revealed a regular rate and rhythm with intact and symmetric peripheral pulses. Respiratory examination was clear to auscultation without wheezing or rales. Facial plethora and erythema, often emphasized in textbook descriptions, were notably absent – findings likely obscured by his darker skin tone.

Given the clinical presentation concerning for significant SVC obstruction, the patient was instructed to proceed urgently to the emergency department for further evaluation and advanced management.

Discussion:
SVC syndrome is a life-threatening condition characterized by obstruction of venous return from the head, neck, and upper extremities. It can result from external compression or intraluminal thrombosis, frequently secondary to malignancies such as lung cancer or lymphoma. In this patient, the presentation following recurrent syncope is an unusual but critical and advanced manifestation likely due to impaired cerebral perfusion secondary to venous congestion and impaired outflow. Importantly, the diagnostic framework clinicians often employ is derived from textbook descriptions and standardized training images, which predominantly feature lighter skin tones where erythema and plethora are conspicuous and thereby shape a biased expectation of what “classic” looks like in practice. In patients with darker skin, however, these well-recognized findings may be subtle, obscured, or entirely absent. This case emphasizes the need for heightened clinical suspicion and awareness beyond textbook expectations to recognize that skin pigmentation can mask prototypical signs and potentially delay the recognition and treatment of SVC syndrome.

Abstract 21

Category Submitting for:
Clinical Research

Abstract Title
Antibodies to malondialdehyde-acetaldehyde are associated with circulating inflammatory mediators during the pre-clinical stages of rheumatoid arthritis

Limit the body of the abstract to be 500 words or less. Type single-spaced. For electronic submission, you do not need to stay within the borders. The abstract form does not accept graphs, charts, tables, etc.*

Background/Purpose:
Circulating concentrations of anti-malondialdehyde-acetaldehyde (MAA) antibody distinguish RA patients from controls and are detectable years prior to arthritis onset. Recent data demonstrate that anti-MAA antibodies play a pathogenic role in RA by promoting osteoclastogenesis and 'priming' monocytes for pro-inflammatory responses. While these data suggest that anti-MAA antibodies are involved in the transition from pre-RA to clinical disease, their pathogenic role remains unknown. We evaluated whether anti-MAA antibody status is associated with differences in serum protein expression during the pre-clinical stage of RA development.
Methods:
We used pre-diagnosis serum samples from RA cases meeting 1987 ACR criteria from the Department of Defense Serum Repository (Zaim et al., Arthritis Rheum 2025). Serum was tested for anti-MAA IgA, IgG, and IgM by ELISA, with high anti-MAA for each subtype defined as the upper quartile of all measurements. Olink Proteomics Immune Regulation, Inflammation, and Cell Regulation panels were performed on all samples (n=197 analytes). The association of each protein (normalized expression value) with anti-MAA antibody status in longitudinally collected samples was tested via linear mixed models accounting for age, race, gender, and time to diagnosis with a subject-level random effect. P-values were adjusted for false discovery rate (FDR) and specific proteins were selected for further evaluation based on FDR-adjusted $p<0.1$ and absolute log2 fold-change (FC) ≥ 0.2.
Results:
A total of 122 participants with RA were included (mean age at diagnosis 37 years, 47% female), all with ≥1 pre-RA sample available (mean 1.59). For each anti-MAA subtype, ~30% of participants had ≥1 value in the upper quartile at any time (6.6% for all 3 subtypes). Five proteins were overexpressed in the presence of high anti-MAA: 1 with IgA, 3 with IgG, and 1 with IgM; most with established or suspected roles in RA pathogenesis. The largest fold-change was observed with IgM-MAA and macrophage chemotactic protein 3 (MCP3), which is highly expressed in RA synovium and promotes synovitis. The only protein observed with IgA-MAA, lymphocyte activation gene-3 (LAG3), inhibits T cell activation, and high serum levels in RA are associated with autoantibody positivity and radiographic progression. IgG-MAA showed the most associations, where the largest was with transcription factor AP-1 (JUN), known to promote synovitis and bone destruction in RA. The only negative association was seen with IgG-MAA and C-type lectin domain family 4D (CLEC4D), a protein thought to have an important role in resolving inflammation.
Conclusion:
Anti-MAA antibody status is associated with differences in the serum proteome during the preclinical stages of RA, particularly among mediators of inflammation and immune responses. This differential expression implicates several established pathogenic mechanisms in RA, suggesting that anti-MAA antibodies may

comprise part of a distinct pathophysiologic state leading towards progression of clinical disease during the transition from pre-RA.

Abstract 22

Category Submitting for:
Clinical Research

Abstract Title
Impact of early aortic valve replacement in patients with moderate aortic stenosis and left ventricular systolic dysfunction

Limit the body of the abstract to be 500 words or less. Type single-spaced. For electronic submission, you do not need to stay within the borders. The abstract form does not accept graphs, charts, tables, etc.*

Introduction:
Currently, guidelines only dictate aortic valve replacement (AVR) in severe aortic stenosis (AS), or in moderate aortic stenosis if there is another coexisting indication for cardiac surgery. Moderate AS is linked to a high risk of death, particularly in patients with heart failure and left ventricular systolic dysfunction (LVSD), according to recent evidence.

Objectives:
We aimed to evaluate the impact of AVR among patients with moderate AS and LVSD defined as left ventricular ejection fraction< 50% and conducted a systemic review and meta-analysis comparing early AVR with clinical surveillance in patients with moderate AS and LVSD.

Methods:
A systematic search was made in the PubMed, Medline, and Cochrane databases from inception to May 1, 2025 for studies comparing the outcomes of early AVR versus clinical surveillance in moderate AS and LVSD. The outcomes of interest were all-cause and cardiovascular mortality. We used random effects model to aggregate data and calculate pooled hazard ratio (HR) with 95% confidence intervals (CIs).

Results:
A total of 6 (1 randomized clinical trial and 5 observational) studies with 3,340 (910 AVR and 2,430 clinical surveillance) patients were included. Among patients with moderate AS and LVSD, early AVR with either surgical or transcatheter modalities was associated with a significant reduction in all-cause mortality (HR 0.60, 95% CI 0.46 to 0.78, p <0.001) and cardiovascular mortality (HR 0.46, 95% CI 0.29 to 0.73, p <0.001).

Conclusions:
Among patients with moderate AS patients and LVSD, early AVR is associated with a significantly lower all-cause and cardiovascular mortality, compared to clinical surveillance. Further long-term and randomized data are required to confirm the benefits of early AVR in this unique population and its impact on long-term outcomes.

Abstract 23

Category Submitting for:
Clinical Vignette

Abstract Title
Take MS Breath Away

Limit the body of the abstract to be 500 words or less. Type single-spaced. For electronic submission, you do not need to stay within the borders. The abstract form does not accept graphs, charts, tables, etc.*
A 40-year-old woman with seven-year history of relapsing remitting multiple sclerosis (MS) on ocrelizumab presented to the emergency department with dyspnea and exertional hypoxia. She had a two-month history of unrelenting upper respiratory infection associated with dry cough, fevers, night sweats, and fatigue. On physical exam, the patient had normal respiratory effort on room air with normal bilateral breath sounds. Comprehensive infectious workup was unrevealing, and the patient ultimately underwent bronchoscopy with BAL, demonstrating normal respiratory flora. Biopsies revealed reactive lung parenchyma with mild inflammation but were negative for malignancy.

Hospital work-up was notable for a white blood cell count of 5.2, though the patient had been leukopenic in the outpatient setting. Chest x-ray demonstrated a left upper lobe opacity, and CT chest revealed variable change in multifocal bilateral pulmonary opacities with increasing opacification in the left upper lobe, concerning for acute pneumonia. Infectious disease (ID) was consulted; ID had low suspicion for an infectious process, given negative comprehensive workup, including negative PCR testing of AFB and fungi. Rheumatologic work-up was obtained and was unremarkable. Pulmonology was consulted and based on new imaging demonstrating a migratory nature of pulmonary opacities and a negative infectious work-up, it was felt by all teams that the patient most likely had a drug-induced organizing pneumonia. The patient was ultimately discharged on prednisone 40 mg daily, without the need for home oxygen, and with plans for close outpatient pulmonology follow-up for steroid taper.

Multiple sclerosis (MS) is an autoimmune neurodegenerative disease of the central nervous system that results in demyelination and axonal injury of nerves that typically presents in young adult women. These insults lead to disability, cognitive impairment and decreased quality of life. Ocrelizumab is a humanized anti-CD20 monoclonal antibody that was FDA approved in 2017 for the treatment of MS. Typical adverse reactions include infusion reactions and infections with other less common side effects being progressive multifocal leukoencephalopathy and a possible increased risk of breast cancer. Notably, in the literature, there appears to be only two documented cases of organizing pneumonia with ocrelizumab use in MS patients; this case represents a third. Other anti-CD20 biologics, such as rituximab, are more recognized to have organizing pneumonia as a rare adverse effect. As biologics are becoming increasingly popular as a treatment option for patients, it is important for the general internist to be aware of all adverse effects of biologics and to consider organizing pneumonia as the differential in shortness of breath cases, particularly in cases with no obvious cause of infection or malignancy.

Abstract 24

Category Submitting for:
Clinical Vignette

Abstract Title
Beyond the Bottle: Transaminase Clues Leading to the Finding of Overlapping Autoimmune Liver Disease in the Setting

of Alcoholic Liver Injury

Limit the body of the abstract to be 500 words or less. Type single-spaced. For electronic submission, you do not need to stay within the borders. The abstract form does not accept graphs, charts, tables, etc.*

Introduction

Alcohol-associated hepatitis may be suspected in patients presenting with elevated transaminases, elevated bilirubin, and jaundice, with a history of high-risk alcohol use, generally defined as >280g per week in females and >420g per week in males. According to the NIAAA and the American College of Gastroenterology, alcoholic hepatitis typically presents with an AST:ALT ratio >1.5, however, absolute values for AST and ALT rarely exceed 400 IU/mL. Marked elevations above this threshold, as seen in this case, are atypical and should prompt evaluation for alternative or concurrent etiologies.

Case Description

A 54-year-old woman with a history of chronic high-risk alcohol use presented with acute jaundice, markedly elevated aminotransferases (AST 1216 IU/L, ALT 581 IU/L), coagulopathy (INR 2.6), and clinical features of hepatic decompensation. Total bilirubin was markedly elevated at 13.1 mg/dL and albumin was low at 1.9 g/dL. Imaging revealed hepatic steatosis and splenomegaly without biliary obstruction. Serologic workup demonstrated highly elevated anti-mitochondrial (AMA) and anti-smooth muscle (F-actin IgG) antibodies.

The patient's continued alcohol use following discharge obfuscates the clinical picture. At follow-up, her baseline symptoms persisted, and she additionally reported new-onset memory impairment. Lactulose and a combination of furosemide and spironolactone were added to her regimen. A few days later, she presented to her local emergency department for increased leg swelling and confusion. Laboratory workup revealed persistently elevated total bilirubin at 3.3 mg/dL and a further decline in serum albumin to 1.5 g/dL since her original admission. Should the patient achieve sustained alcohol abstinence and liver enzyme elevations persist, a liver biopsy may be warranted to elucidate alternative or coexisting etiologies. Conversely, if liver enzymes normalize, an assessment for fibrosis would be the next logical step in staging her liver disease.

Discussion

The excessive elevation in transaminases prompted further investigation in this patient initially suspected of having isolated alcohol-induced acute liver injury. Given the obstructive nature of symptoms (jaundice, dark urine, pale stools, pruritus), a workup to assess for alternative or compounding potential etiologies was warranted. This patient's elevated AMA and F-actin titers seem to point toward a potential underlying autoimmune cause(s) for their acute liver injury, likely exacerbated by chronic high-risk alcohol use.

Conclusion

Do not attribute severe transaminase elevation solely to alcohol in patients with a history of heavy use; always pursue a thorough diagnostic workup when AST or ALT exceed 400 IU/mL. The presence of autoimmune markers (AMA, F-actin IgG) in this context raises suspicion for overlapping autoimmune liver disease, which may require immunosuppressive therapy and has distinct prognostic and therapeutic implications. Abstinence from alcohol is critical for both diagnostic clarity and management, but persistent enzyme elevation after cessation should prompt further evaluation, including consideration of liver biopsy. This case underscores the importance of integrating clinical, laboratory, and serologic data to avoid premature closure on the diagnosis of alcoholic hepatitis and to ensure that alternative or coexisting liver diseases are not missed.

Abstract 25

Category Submitting for:
Clinical Vignette

Abstract Title
Anoxia vs. Antibodies: Overlapping presentations of Miller Fisher Syndrome and cerebellar peduncle stroke

Limit the body of the abstract to be 500 words or less. Type single-spaced. For electronic submission, you do not need to stay within the borders. The abstract form does not accept graphs, charts, tables, etc.*

Introduction

Miller Fisher Syndrome (MFS) is a rare variant of Guillain-Barré syndrome (GBS) which presents with a classic triad of ataxia, areflexia, and ophthalmoparesis. Anti-ganglioside GQ1b antibodies are present in approximately 85% of MFS patients and have a high level of specificity for this condition. MFS generally has a very good prognosis and is treated with supportive care, pain control, respiratory support as needed, immunotherapy in some cases, and physiotherapy to recover function. Cerebellar infarcts account for only 3% of ischemic strokes in the United States and often present with more subtle symptoms. Strokes in this location may present with symptoms such as vertigo, ataxia, dysarthria, and nystagmus. Because of the similarities in presentation, these two diagnoses may be difficult to differentiate initially.

Case Description

A 52-year-old male with multiple vascular risk factors (HTN, HLD, CKD) presented to the ED with complaints of dizziness, fullness of the left ear, binocular diplopia, imbalance, and vomiting upon awakening. The patient was noted to have horizontal nystagmus and left CNVI palsy. A code stroke was activated, even though he was found to have a NIHSS score of 0 and transient symptoms. Initial CT head was inconclusive, and MRI was negative for acute abnormalities. Neurology recommended stroke management with a working diagnosis of MRI-negative brainstem stroke, and the patient was started on aspirin, atorvastatin, amlodipine, and hydralazine for persistent hypertension. The patient was managed inpatient until discharge to a rehabilitation facility days later.

Following discharge, the patient's labs demonstrated anti-GQ1b antibodies, and a diagnosis of Miller Fisher Syndrome was established. The patient started treatment with IVIG, and he received 30mg IVIG daily for 5 days. Approximately three weeks following his initial presentation, the patient described resolution of his diplopia. However, he continued to experience abnormal extraocular movements. His left sided cerebellar ataxia continued to cause a feeling of unsteadiness, requiring the use of a cane to ambulate. This was paired with continued diminished reflexes and decreased vibratory sense. His left sided hearing loss also persisted, now accompanied by tinnitus, and he was experiencing mild brain fog. No numbness or tingling was noted. Due to his evolving symptoms which were no longer explained by MFS alone, a repeat MRI was performed with outpatient neurology with thin cuts through the brainstem. This demonstrated an ischemic stroke in the left cerebellar peduncle. An infarct in this location may also cause symptoms such as ataxia and hearing impairment. Due to these dual diagnoses, the patient is following with neurology for treatment and monitoring of the stroke as well as ENT to address his continued unilateral sensorineural hearing loss.

Discussion

This case provides an interesting diagnostic overlap between MFS and an atypical stroke in a cerebellar peduncle. MFS and cerebellar strokes may present with similar symptoms, complicating diagnosis. In cases with diagnostic uncertainty, repeat advanced neuroimaging alongside anti-GQ1b antibody testing is critical to ensure comprehensive diagnosis and

timely treatment. Multidisciplinary follow-up is necessary to ensure optimal management of overlapping neurological conditions following treatment for MFS and cerebellar stroke.

Abstract 26

Category Submitting for:
Clinical Research

Abstract Title
Inflammatory Bowel Disease and Thyroid Cancer: No Association

Limit the body of the abstract to be 500 words or less. Type single-spaced. For electronic submission, you do not need to stay within the borders. The abstract form does not accept graphs, charts, tables, etc.*
Introduction: Inflammatory bowel disease (IBD), including Crohn's disease and ulcerative colitis, is a chronic gastrointestinal condition with rising global incidence and significant patient burden, and understanding the relationship between types of IBD and other diseases is important for understanding the needs of the patient population. Previous literature has investigated a potential association with thyroid cancer with possible mechanisms including shared inflammatory processes, prolonged immunosuppressive therapy, and alterations in gut microbiota that may link these conditions with conflicting conclusions. In the midst of this complex landscape, this study aims to determine if there is a stronger association between Crohn's disease or ulcerative colitis with thyroid cancer in order to clarify potential shared risk factors and pathophysiological connections.

Methods: Inclusion criteria were patients ≥18 years old with a diagnosis of either Crohn's disease or ulcerative colitis in the National Inpatient Sample data between 2017–2022. We stratified admissions into Crohn's disease and ulcerative colitis for comparison, and the primary outcome was a history of thyroid cancer. Secondary outcomes included mortality, length of stay, and hospital charges. Propensity matching was used to eliminate selection bias. There were 1,902,654 admissions included in the study, with 1,166,640 Crohn's disease admissions (61.3% of admissions included) and 736,015 ulcerative colitis admissions (38.7% of admissions included).

Results: There was not a statistically significant difference in the prevalence of thyroid cancer between the groups ($p = 0.56$). Compared to ulcerative colitis, Crohn's disease had a statistically significant lower mortality (OR = 0.88, $p < 0.001$), shorter length of stay (mean difference: -0.22 days, $p < 0.001$), and lower hospital charges (mean difference: -$4,228, $p < 0.001$).

Conclusion: Based on this study, a history of thyroid cancer does not appear to be significantly associated with an increased prevalence of either ulcerative colitis or Crohn's disease. This hints at shared risk factors such as chronic inflammation, similar pharmacologic treatments, and common lifestyle contributors that may lead to similarities in disease association between types of IBD. Although previous research has highlighted distinct immunologic profiles and disease behaviors between the two conditions, these differences may not directly influence thyroid cancer risk. Interestingly, Crohn’s disease was associated with lower mortality, shorter hospital stays, and reduced hospital costs compared to ulcerative colitis, potentially reflecting differences in disease perception and management. These findings highlight the need for further investigation into the nuanced pathophysiological and clinical distinctions between these inflammatory bowel diseases and leave room for understanding other disease associations.

Abstract 27

Category Submitting for:
Clinical Research

Abstract Title
Molecular Profiling of Salivary Duct Carcinoma Using the AACR Project GENIE Database

Limit the body of the abstract to be 500 words or less. Type single-spaced. For electronic submission, you do not need to stay within the borders. The abstract form does not accept graphs, charts, tables, etc.*

Introduction: Salivary duct carcinoma (SDC) is a rare and aggressive malignancy with a high propensity for local invasion and distant metastasis. It carries a poor prognosis and shows limited response to conventional chemotherapy. Given these challenges, there is a critical need to identify novel systemic and targeted therapies. This study aims to highlight the genetic profile of SDC using a large, publicly available genomic dataset to better understand the molecular mechanisms driving tumor development, metastatic potential, and prognostic outcomes. Uncovering these pathways may not only guide personalized treatment for SDC but also inform therapeutic strategies in other cancers with similar molecular features.

Methods: This study analyzed data from 226 tumor samples of 200 adult SDC patients using the AACR Project GENIE® v17.0-public database. Demographic and clinical data were extracted, and genomic alterations were assessed using harmonized somatic mutation and copy number alteration (CNA) calls. Mutations and CNAs were stratified by sex, race, and tumor site (primary vs. metastatic). Statistical comparisons were performed using chi-squared tests with false discovery rate (FDR) correction. Gene co-occurrence and mutual exclusivity were also evaluated.

Results: The cohort was predominantly male (78.5%) and included a high proportion of Asian patients (42.9%). Primary tumors accounted for 40.3% of cases, while 53.5% were metastatic. Genomic analysis identified recurrent alterations in TP53 (59.7%), PIK3CA (24.8%), HRAS (23.0%), and ERBB2 (8.4%). Copy number gains were frequent in ERBB2 (30.2%) and CDK12 (19.1%), whereas deletions commonly affected CDKN2A/B (7.9%). Subgroup analysis revealed differences by sex and ancestry, including enrichment of ERBB2 and CDK12 mutations in women, and IFNGR1 and RHBDF2 variants in Asian and White patients, respectively. Notably, ERBB2 alterations were more prevalent in metastatic tumors ($p = 0.0122$), suggesting a role in progression. Co-occurrence of PIK3CA with HRAS and TP53 with ERBB2, alongside mutual exclusivity of HRAS with ERBB2, highlight distinct oncogenic pathways.

Conclusion: This analysis reveals the complex genomic landscape of salivary duct carcinoma (SDC), highlighting distinct mutation patterns across racial and sex-based groups. Key oncogenes such as TP53, PIK3CA, HRAS, and ERBB2 show high mutation rates, emphasizing SDC's heterogeneity. The findings stress the need for inclusive genomic research and exploration of epigenetic and environmental factors. While targeted therapies are emerging, their efficacy amid diverse mutation profiles remains uncertain. A deeper understanding of these dynamics is crucial to developing precise diagnostic tools, prognostic markers, and personalized treatments, ultimately aiming to improve clinical outcomes for patients with SDC.

Abstract 28

Category Submitting for:
Clinical Research

Abstract Title
Comprehensive Genomic Profiling of Acral Melanoma: Insights from the AACR Project GENIE Database

Limit the body of the abstract to be 500 words or less. Type single-spaced. For electronic submission, you do not need to stay within the borders. The abstract form does not accept graphs, charts, tables, etc.*
Background: Acral melanoma (AM) is a rare but aggressive form of skin cancer that arises on the hairless skin, such as the palms, soles, and nail beds. It disproportionately affects individuals with darker skin tones and is frequently diagnosed at advanced stages. Genomic data on AM remains limited, hindering the development of effective targeted therapies.

Methods: A retrospective genomic analysis of AM was conducted using data from the American Association for Cancer Research (AACR) Project GENIE repository. A total of 212 tumor samples from 203 patients were examined for somatic mutations and copy number alterations (CNAs). Mutational patterns were explored across demographic and clinical variables, including race, sex, and tumor type. Co-occurrence, mutual exclusivity, and survival analysis were also performed on the cBioPortal website or RStudio.

Results: NRAS (21.2%), BRAF (18.3%), and KIT (9.0%) were the most commonly mutated genes in the AM cohort. CDKN2A and CDKN2B deletions were observed in over 20% of samples, alongside recurrent amplifications in CDK4, CCND1, and TERT. Several significant co-mutation patterns were identified, including those between NF1 and PTPRT, as well as KRAS and TERT. Differences in mutation frequency were noted across sex and racial groups. Regarding tumor type, NAB2 mutations were exclusive to metastatic tumors. RAF1 AND LRP1B were associated with significantly reduced survival while patients with NRAS mutations had improved overall survival. These findings suggest molecular heterogeneity and distinct pathway alterations in AM compared to other melanoma subtypes.

Conclusion: This study provides a comprehensive genomic overview of AM, highlighting recurrent alterations in the MAPK and cell cycle pathways, as well as potential demographic-specific molecular markers. Given the distinct molecular profile of AM, these findings support the need for expanded molecular profiling to improve prognostic accuracy and identify candidates for future targeted therapies of this rare and aggressive subtype of melanoma.

Abstract 29

Category Submitting for:
Clinical Vignette

Abstract Title
Drug Induced Liver Injury Secondary to Herbal Supplement Use

Limit the body of the abstract to be 500 words or less. Type single-spaced. For electronic submission, you do not need to stay within the borders. The abstract form does not accept graphs, charts, tables, etc.*
We describe the case of a 34-year-old female with past medical history of migraine and polycystic ovarian syndrome (PCOS) who presented with new onset hepatitis. Patient denied alcohol use though history was significant for several over the counter (OTC) supplements including Migralief daily, Migralief-NOW, and Flo Ovarian for migraine and PCOS,

respectively.

Months prior to hospitalization, patient had a similar, transient, elevation in liver enzymes with AST >900 and ALT >1500.

Subsequently, she experienced a migraine for which she represented to the emergency department. Her aminotransferases were again found elevated to AST of 985 and ALT of 1517. She was found to have a mildly positive smooth muscle antibody at 1:40. Imaging and further work up was unrevealing. She continued to have intermittent migraines over this time for which she continued supplement use. Months later, she experienced new abdominal bloating, general malaise, diarrhea, and scleral icterus. She was admitted for further evaluation at an outside hospital, demonstrating a peak AST of 3275 and ALT of 3119. MELD score at the time of admission was 25. Right upper quadrant ultrasound was normal.

She transferred to Nebraska Medical Center for further workup and possible transplant evaluation. Further evaluation yielded total bilirubin of 15.3, AST of 1022, ALT of 1907, PT of 23.5. MELD score at the time of admission to NMC was 27. Hepatology recommended an interventional radiology liver biopsy prior to initiation of steroids for autoimmune hepatitis concern. She underwent an IR-guided transjugular liver biopsy without complication. Patient initiated on methylprednisolone for suspected autoimmune hepatitis. A few days later, her pathology showed florid acute lobar hepatitis consistent with acute drug reaction, suspected due to herbal supplements.

She was discharged home with an oral prednisone taper, however, due to lack of clinical improvement and new right upper quadrant ultrasound findings consistent with cirrhosis, she is being recommended for liver transplant.

Many herbal supplements can be harmful to the body, especially the liver as it serves to metabolize these compounds. As herbals have become more prevalent in recent years, it is increasingly important to consider drug induced liver injury in the differential for acute liver patients.

More recently, herbal supplements have been implicated in as many as 16% of drug induced liver injury cases. As found through LiverTox, many individual herbs have been directly linked to hepatocellular damage. In addition, there are many reports of contaminants including heavy metals and pesticides found in herbal supplements that may contribute to liver toxicity. Currently in the United States, herbal supplement manufacturers are not required to conduct any preclinical safety or efficacy testing, nor to receive Food and Drug Administration approval prior to product distribution. This stresses the importance of not only patient education on the potential dangers, but regular screening for herbal supplement use as well.

National Institute of Diabetes and Digestive and Kidney Diseases. (2012–). LiverTox: Clinical and Research Information on Drug-Induced Liver Injury [Internet]. Herbal and Dietary Supplements. (Updated 2025, July 1). National Institutes of Health. Retrieved September 2, 2025, from https://www.ncbi.nlm.nih.gov/books/NBK548441/

Abstract 30

Category Submitting for:
Clinical Vignette

Abstract Title
Perioperative Posterior Ischemic Optic Neuropathy in a Patient Following ENT Surgery

Limit the body of the abstract to be 500 words or less. Type single-spaced. For electronic submission, you do not need to stay within the borders. The abstract form does not accept graphs, charts, tables, etc.*

Introduction:
Posterior ischemic optic neuropathy (PION) is a rare optic neuropathy of vascular origin involving the retrobulbar optic nerve. It differs from the more common anterior ischemic optic neuropathy (AION), which involves the optic nerve head and presents with disc edema. The etiology is often multifactorial, with reported cases frequently associated with recent surgery as the inciting event. While there are other types of PION, our study focuses specifically on perioperative PION as it relates to the patient case. Commonly reported risk factors for perioperative PION include severe and prolonged hypotension, anemia from increased blood loss, hemodilution, orbital or periorbital edema, direct orbital compression in the prone position, and abnormal autoregulation. Most often, these cases are seen with orthopedic spine surgeries, cardiac bypass surgeries, and radical neck dissection. This disorder results in bilateral or unilateral visual impairment that can be irreversible and is more commonly seen in younger individuals.

Case Description:
A 47-year-old male presented to the emergency department with significant epistaxis, loss of consciousness, and perioperative vision loss. His past medical history included nasal polyps and a deviated septum. He had undergone extensive endoscopic sinus surgery with nasal polypectomy earlier that day and had been discharged home. While at home, he developed profuse epistaxis followed by loss of consciousness. The patient awoke with complete bilateral vision loss. He was hypertensive upon ED arrival with SBP >190's but the patient was otherwise hemodynamically stable. Code stroke was activated, and CT head, CT maxillofacial, and CTA head/neck were all negative for acute CVA or other process. Extraocular movements were intact, and intraocular pressures were within normal limits. Ophthalmology was consulted, and pulse-dose steroids were initiated with 1g IV Solumedrol daily for 3 days due to concern for bilateral PION. MRI orbits subsequently confirmed bilateral PION. The patient's vision steadily improved over the hospital course; however, he continued to experience blurred distance vision and difficulty reading fine print upon hospital discharge.

Discussion:
As previously mentioned, most PION cases follow recent orthopedic or cardiac surgery, and limited literature currently exists regarding ENT surgeries. One notable case involved a 19-year-old patient who underwent functional endoscopic sinus surgery and remained asymptomatic until 48 hours post-op when nasal packing was removed. Within two hours, the patient developed blurriness in the left eye that quickly progressed to complete vision loss. Despite rapid treatment with high-dose corticosteroids and rheomacrodex, vision did not return. High-dose intravenous steroids for 3–5 days remain the standard treatment for suspected PION, with early intervention being critical to preventing further vision loss and improving the likelihood of restoring the patient's vision. Management should also include evaluating systemic risk factors that may contribute to PION, such as anemia, obesity, and vascular risk factors (hypertension, atrial fibrillation, diabetes, prior stroke, smoking history, etc.). Understanding and screening for these factors preoperatively is essential to preventing this rare but potentially devastating complication.

ABSTRACT 31

Category submitting for: Clinical Vignette

Abstract Title: Kaposi Sarcoma and KSHV/HHV8-Associated Multicentric Castleman Disease: A Case Report

Introduction:

Multicentric Castleman disease (MCD) is a lymphoproliferative disorder involving multiple regions of lymphadenopathy with characteristic histopathology. Approximately half of all MCD cases can be attributed to human herpesvirus-8 (HHV-8) or Kaposi sarcoma-associated herpes virus (KSHV), an endemic DNA virus. However, HHV-8 involvement is typically seen in the setting of HIV+ status or severe immunodeficiency. We present a case of HHV-8 associated MCD in a HIV- patient without obvious immunodeficiency.

Case:

A 57 year old male with a history of T2DM, HTN, and HLD, presented to the ED with progressive fatigue, weakness, anorexia, and a chronic cough for the past four months following a recent trip to Mexico. Upon admission, the patient was febrile, tachycardic, and labs showed anemia and thrombocytopenia without leukocytosis. Through extensive workup he was found to be positive for coccidioides with a 1:8 titer, although this is considered a low titer he was treated with Fluconazole due to his symptomatology. A PET CT imaging showed prominent bilateral axillary and mediastinal adenopathy prompting a lymph node biopsy. Numerous etiologies were considered for his diffuse lymphadenopathy including tuberculosis, histoplasmosis, sarcoidosis, cytomegalovirus, and lymphoma.

Ultimately, the patient's pathology report confirmed MCD and Kaposi sarcoma. Additionally, he was found to be positive for HHV-8 but was HIV negative. The patient was started on rituximab, doxorubicin and dexamethasone. His status started to decline and he was transferred to ICU Unfortunately the patient developed tumor lysis syndrome and found to have an acute covid infection. He was found to have progression of his malignancy and he passed away shortly after transitioning to comfort measures.

Discussion:

Overall, this case represents an unusual presentation of KSHV/HHV8-associated MCD in an immunocompetent patient. Most cases of HHV8-associated MCD occur in the context of HIV+ individuals. However, this patient was found to be HIV-, which significantly limits treatment options and worsens the prognosis compared to HIV+ patients. The improved prognosis in HIV+ MCD is thought to be due to the rapid clinical response following initiation of antiretroviral therapy—a treatment that is ineffective in HIV- MCD cases. Additionally, this case underscores the critical role of pathology in establishing a definitive diagnosis, highlighting the need for early involvement of pathology to enable timely diagnosis and initiation of therapy, ultimately improving patient outcomes.

Conclusion:

While KSHV/HHV8-associated MCD is commonly seen in HIV+ patients, it can be found in patients without any apparent immunodeficiency. This case highlights the need to include KSHV/HHV8-associated MCD in the differential diagnosis for

HIV- lymphadenopathy, it illustrates the different clinical courses for HIV+ KSHV/HHV8-associated MCD compared with HIV- KSHV/HHV8-associated MCD, and emphasizes the key role of pathology in certain infectious disease diagnoses.

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Abstract 32

Category Submitting for:
Clinical Vignette

Abstract Title
CMV Strikes Back: A Viral Awakening Post-Transplant

Limit the body of the abstract to be 500 words or less. Type single-spaced. For electronic submission, you do not need to stay within the borders. The abstract form does not accept graphs, charts, tables, etc.*
Introduction
Cytomegalovirus (CMV) is a highly prevalent viral infection throughout the world with seroprevalence rates ranging from 40 to 100 percent. Primary CMV infection in healthy adults presents with typical viral syndrome symptoms including fatigue, fever, sore throat, and myalgias. Similar to other herpes viruses, CMV establishes a latent infection following the acute phase. Although as a primary infection it is typically mild, it can pose a greater issue with reactivation in immunocompromised hosts, especially in transplant patients.
Case Description

A 44-year-old woman with history of latent autoimmune diabetes of adults (LADA), end stage renal disease secondary to diabetic nephropathy status-post kidney transplant in December 2023 (CMV donor positive / recipient negative), hypertension, postural orthostatic tachycardia syndrome (POTS), stroke, and epilepsy presented to an outside hospital ED with a five day history of fevers, three day history of emesis, and two generalized seizures lasting 10 minutes and 5 minutes respectively. She was transferred and stabilized in the ICU. Upon further work-up, she was diagnosed with E. Coli bacteremia with acute renal failure. The source of bacteremia was likely a urinary infection although this was not confirmed.

Her infection was treated appropriately with antibiotics, and her kidney injury resolved with fluids. Her hospital course was complicated by orthostatic hypotension. She chose to leave against medical advice on her fourth day of hospitalization and was discharged with a course of oral antibiotics and midodrine for orthostasis.

After discharge, her CMV quantitative PCR returned elevated at 7,200,000 IU/mL. Her transplant team instructed her to start oral valganciclovir and discontinue mycophenolate. She returned to the ED 2 days after discharge with complaints of weakness, nausea, vomiting, and a seizure lasting approximately 2 minutes. She was transitioned to IV ganciclovir and readmitted.

She had increased diarrhea from her baseline but was otherwise asymptomatic throughout her hospitalization. Her CMV quantitative PCR levels decreased to 191,000 IU/mL, and she was discharged on oral valganciclovir. She was scheduled for weekly monitoring of CMV levels with her transplant team. Her CMV continued to down trend with improvement in her symptoms, and she remains on suppressive anti-viral medication.

Discussion

CMV reactivation following a kidney transplant is the highest risk in patients who are CMV donor positive / recipient negative. Patients who experience CMV reactivation can remain asymptomatic despite evidence of CMV viral burden which is known as CMV syndrome. When symptomatic, it is referred to as tissue-invasive CMV disease. This can present as gastrointestinal disease, hepatitis, pancreatitis, pneumonitis, meningoencephalitis, retinitis, or nephritis. This case illustrates the importance of keeping CMV on the differential in post-transplant patients as CMV infection has a wide array of presentations, and symptoms can be subtle.

Abstract 33

Category Submitting for:
Clinical Research

Abstract Title
Harnessing AACR Project GENIE to Define the Molecular Features of Desmoplastic Small Round Cell Tumor

Limit the body of the abstract to be 500 words or less. Type single-spaced. For electronic submission, you do not need to stay within the borders. The abstract form does not accept graphs, charts, tables, etc.*

Background

Desmoplastic small round cell tumor (DSRCT) is a rare but aggressive soft tissue sarcoma affecting young adults and adolescents. DSRCT is an intra-abdominal malignancy that presents with over a dozen tumors, rather than a single mass. With its largely asymptomatic course and rapid dissemination, DSRCT is diagnosed late, and prognosis, even with treatment, is poor. This study aims to better characterize the demographic variation in DSCRT presentation and the genomic profile of the cancer to guide future studies on diagnosis and treatment.

Methods
The American Association for Cancer Research Genomics Evidence Neoplasia Information Exchange database (AACR GENIE) was utilized to identify genetic alterations seen in DSRCT. Data on 142 patients and 202 samples was queried to identify disease prevalence by sex, age, ethnicity, and race. Information was collected on the frequency of somatic mutations and copy number alterations, the rates of mutation co-occurrence, and the specific mutations seen in primary and metastatic DSRCT. Commonly occurring mutations were further stratified and characterized for analysis by sex and race.

Results
Of the 202 samples and 142 patients from which data was collected, 82.4% were males and 15.5% were females. Non-Hispanic patients accounted for 75.4%, with 16.2% being Hispanic. Moreover, 59.2% of the studied samples were from White patients, with rates of 19% among Black population and 8.5% among the Asian population. ARID1A, TP53, ATM, TERT, and FGFR4 were the most frequently identified somatic mutations. Copy number alterations seen in DSRCT were most commonly homozygous deletions in tumor suppressor genes, including CRLF2 (3.6%), PTEN (2.6%), and FAT1 (2.7%), rather than gene amplifications. Among both males and females, WT1 mutations were most common, found in 84.80% of men and 68.00% of women, followed by NSD1 mutations, found in 1.18% of males and 12.5% of females. Certain mutations, with single occurrences, were noted either exclusively in males or females. Non-White patients saw exclusive single occurrences of numerous different mutations, including FLI1, KDM2B, MAGED1, MKI67, PCLO, and TRAF5, and more recurrent mutations in ANKRD11 and KMT2C ($p< 0.05$). In studying mutations that often co-occurred, our data yielded significant values of co-occurrence between FGFR4 and EP300 ($p< 0.05$). Moreover, primary tumor samples had numerous exclusive mutations, including AKAP9, KDM2B, MAGED1, MKI67, PCLO, and TRAF1 mutations, each with a single occurrence ($p< 0.05$). Conversely, metastatic samples presented with exclusive mutations in FIP1L1 and NRIP1 ($p< 0.05$).

Conclusion
Our data highlights mutational variation across the different demographic cohorts studied, including age, sex, and race and ethnicity. These identified mutation patterns are vital to the implementation of future studies on specific genes and proteins that can serve as either diagnostic markers or therapeutic targets.

Abstract 34

Category Submitting for:
Clinical Research

Abstract Title
Genomic and Demographic Landscapes of Angiosarcoma: An Analysis from the AACR Project GENIE Registry

Limit the body of the abstract to be 500 words or less. Type single-spaced. For electronic submission, you do not need to stay within the borders. The abstract form does not accept graphs, charts, tables, etc.*
Introduction:
Angiosarcoma is a rare and highly aggressive malignancy that accounts for less than 2% of all soft tissue sarcomas. Despite multimodal treatment approaches, prognosis remains poor, with five-year survival rates below 40%. Genomic studies of angiosarcoma have been limited by small cohorts, often drawing from single institutions or registries. Prior reports highlight recurrent alterations in TP53 and genes involved in angiogenesis, such as KDR and FLT4, but the full extent of the genomic landscape, its association with demographic factors, and its therapeutic implications remain

incompletely defined. To address these gaps, we analyzed the AACR Project GENIE registry, a large, multi-institutional database.

Methods:
Patients with angiosarcoma were identified from the AACR Project GENIE v18.0-public database using cBioPortal, yielding 359 tumor samples from 346 patients. Demographic variables including sex, race/ethnicity, age, and tumor site were selected for. Samples were classified as primary or metastatic based on site of collection. Sequencing data was standardized through GENIE's framework. Somatic mutations, copy number alterations, and tumor mutational burden were assessed, while synonymous mutations, mutations classified as variants of unknown origin, and samples with missing values were excluded. Statistical significance was assessed by t-test for continuous variables and chi-squared for categorical data with significance set at $p < 0.05$.

Results:
We analyzed 359 tumors from 346 patients, and noted that overall, there was a slight female predominance. Recurrent mutations included TP53 (20.6%), KDR (13.6%), PIK3CA (10.6%), and KMT2D/FLT4 (each 9.2%), . Copy number alterations occurred in MYC (27.3%), CRKL (10.4%), FLT4 (5.54%), and KDR (4.84%). Homozygous deletions occurred in CDKN2A (6.57%), CDKN2B (6.57%), and MTAP (3.81%). Significant co-occurrence included FAT1–NOTCH2, TP53–ATRX, and NOTCH1–ARID1A. Mutual exclusivity was seen with KDR–FLT4 and KDR–ATRX. By sex, females exhibited enrichment in MYC and HRAS, while males exhibited enrichment in POT1, NTRK2, and FAT1. Compared with primary tumors, metastatic tumors more often displayed ZFHX4, FGFR1, MSI2, HIST1H1C, and TOP1 mutations, while MAPK7 mutations occurred only in primary tumors.

Conclusions:
This study represents one of the largest genomic analyses of angiosarcoma to date. Findings confirm recurrent alterations in DNA damage response and telomere regulation (TP53, ATRX), angiogenesis (KDR, FLT4), and PI3K pathway activation (PIK3CA), while highlighting subtype-specific differences such as MYC amplifications in breast angiosarcoma. The observed co-occurrence and exclusivity patterns suggest distinct biological programs that may guide therapeutic targeting. These results provide a foundation for biomarker-driven clinical trial design and emphasize the need for prospective registries integrating clinical outcomes, treatment exposures, and molecular profiling to clarify prognostic and therapeutic relevance. Future studies incorporating clinical outcomes and therapeutic data are needed to clarify the prognostic value of these alterations and their potential as therapeutic targets.

Abstract 35

From Negative Echo to Tamponade: Rapid Progression of Pericardial Effusion in a Patient With Systemic Sclerosis and Prior Thoracic Radiation

Introduction:

Pericardial effusion is a potentially life-threatening condition that can result from autoimmune disease, malignancy, prior thoracic radiation, or chronic kidney disease. Early recognition and timely intervention are critical, yet the presentation can be subtle, particularly in patients with multiple comorbidities.

Case Description:

A 81-year-old female with a past history of systemic sclerosis, interstitial lung disease, squamous cell carcinoma of the left lung (status post stereotactic body radiation therapy), hypertension, mitral stenosis, aortic stenosis (status post transcatheter aortic valve replacement), and chronic kidney disease stage 3a presented to the University of Nebraska Medical Center (UNMC) emergency department with hypotension, following one week of shortness of breath, lightheadedness, and poor appetite. One month prior, the patient had been hospitalized due to worsening acute kidney injury. She was also undergoing evaluation at the Mayo Clinic for surgical repair for her mitral stenosis after being deemed not a surgical candidate at UNMC.

At the time of presentation, her systolic blood pressure was 70 mmHg, which improved with 1 L bolus of Lactated Ringer's. Physical exam was notable for hypotension without jugular venous distension, distant heart sounds, or pulsus paradoxus. Laboratory workup showed baseline anemia and creatinine of 1.2 but was otherwise unremarkable. EKG showed evidence of new atrial fibrillation with RBBB.

Point-of-care ultrasound revealed a large pericardial effusion that had not previously been observed during recent ECHO obtained at the Mayo Clinic the month prior. Formal ECHO and CT chest detailed large circumferential pericardial effusion with pericardial thickening and compression of the ventricles suggesting tamponade physiology, as well as echogenic material within the effusion, concerning for thrombus. Severe mitral stenosis, pulmonary hypertension with intermittent septal bowing into the LV, and a highly mobile serpiginous echodensity in the right atrium were also noted.

Cardiology was consulted, and despite not initially identifying tamponade, they recommended urgent pericardiocentesis in the setting of worsening dyspnea and chest discomfort. The procedure was successful and initially well-tolerated. However, approximately 90 minutes later, the patient became acutely hypotensive, developed pulseless electrical activity arrest, and died, despite approximately 20 minutes of resuscitative measures.

Discussion:

This case highlights the diagnostic and therapeutic challenges of pericardial effusion in patients with multiple comorbidities. Possible etiologies in this patient included connective tissue disease, malignancy, radiation-associated pericarditis, chronic kidney disease, and thrombus, likely multifactorial in origin due to stasis from tamponade physiology, new-onset atrial fibrillation, and malignancy-associated hypercoagulability. The echocardiogram performed just a month prior to the patient's second admission did not demonstrate an effusion, suggesting either rapid interval development or previously subclinical disease.

This raises an important clinical consideration: whether patients with high-risk comorbidities and progressive but nonspecific cardiopulmonary symptoms might benefit from earlier repeat echocardiogram to detect possible effusions before serious sequelae arise. This case further emphasizes the rapid diagnostic utility of point-of-care ultrasound despite the complexities in managing patients with multiple comorbidities.

ABSTRACT 36

Abstract Title: Spontaneous Mediastinal abscess presenting as atypical chest pain

Case:

A 23-year-old without significant past medical history presented to outside ED with a complaint of 2 months of chest pain while eating and while at rest with increased severity over the past 3 days. She had previously been seen twice in

the ED over the previous 2 months with similar symptoms. Vitals were consistently within normal limits. CBC, CMP, lipase, troponin, and chest X-Ray were unremarkable. She was discharged from the ED after being treated for a presumed anxiety attack with diphenhydramine and lorazepam and given return precautions for her chest pain.

Six days later she returned due to ongoing pain. At this time, a CT abdomen and pelvis showed a 3.2cm fluid collection with gas bubbles in the posterior right mediastinum, adjacent to the esophagus with middle mediastinal reactive lymph nodes most consistent with possible abscess or esophageal perforation. She then was transferred to a tertiary care center for evaluation by thoracic surgery.

Upon arrival, the patient was started on broad spectrum antibiotics including vancomycin, piperacillin-tazobactam, and fluconazole. Esophagram did not show esophageal extravasation. Gastroenterology evaluated the patient with an endoscopic ultrasound that showed possible fistula formation concerning for a mediastinal abscess given the presence of purulent fluid in the esophagus with adjacent ulceration of the esophageal wall. The patient then underwent Video-Assisted Thoracoscopic Surgery which did not show signs of fistulation but did uncover the presence of a necrotic lymph node in the posterior mediastinum medial to the esophagus. Cultures grew Streptococcus agalactiae and a gram-negative rod. Fungal and acid-fast cultures were negative. Antibiotics were de-escalated to ampicillin sulbactam and later transitioned to amoxicillin clavulanate. She completed four weeks of antibiotic therapy. Follow up CT chest showed resolution of the abscess.

Discussion:

This case uniquely highlights the diagnostic complexity of differentiating between esophageal perforation and mediastinal abscess in a patient without classic risk factors, or typical presentation. Esophageal perforation usually presents with acute severe chest pain, subcutaneous emphysema, fever, and most often following instrumentation, trauma, or severe vomiting. Mediastinal abscess typically arises as a complication of esophageal perforation or descending infections, with symptoms including fever, chest pain, and dysphagia. In contrast, this patient had persistent but stable chest pain over two months,

normal labs and imaging on initial evaluations, no history of trauma, vomiting, or instrumentation, and remained hemodynamically stable.

Conclusion:

Chest pain has a wide differential requiring systematic evaluation. Life-threatening causes include acute coronary syndrome, pulmonary embolism, aortic dissection, pneumonia, pericarditis, reflux, musculoskeletal pain, and atypical causes such as anxiety, esophageal perforation, or in this case, mediastinal abscess. This patient lacked these typical features, presenting only stable chest pain, making it challenging to distinguish between esophageal perforation and a primary mediastinal abscess. The case underscores the need to maintain a broad differential and avoid anchoring bias when evaluating atypical presentations.

ABSTRACT 37

A Case Report of Severe Dengue in a Renal Transplant Recipient at a Midwest US Hospital

We report a case of severe dengue fever in a 72-year-old renal transplant recipient who presented to a Midwest US hospital following recent travel to Mexico. The patient’s course was complicated by shock, fulfilling the World Health

Organization criteria for severe dengue. Notably, the patient also developed a concurrent extended-spectrum beta-lactamase (ESBL) *Escherichia coli* bacteremia and severe renal impairment in the setting of a previous renal transplant. Management included a course of broad-spectrum antibiotics, fluid resuscitation, selective platelet transfusions, and ultimately, reduction of immunosuppressive therapy, with the greatest clinical improvement noted after reducing the patient's immunosuppressive medications. His prolonged disease course and complex presentation highlight the vulnerability of immunocompromised individuals to severe dengue and its possible complications. This case highlights the importance of clinical vigilance for tropical diseases in returning travelers, the potential for secondary bacterial co-infections, and the role of immunosuppressive management and conservative platelet transfusion strategy in transplant patients with dengue.

ABSTRACT 38

Abstract Title: Breast Cancer–Associated Thrombotic Microangiopathy: The Paradox of Stable Scans and Unstable Blood

Category: Clinical Vignette

Cancer-associated thrombotic microangiopathy (TMA) is a rare and often fatal consequence of solid and hematologic malignancies. TMA in cancer patients can arise from the cancer itself, secondary to cancer treatments, or due to unrelated causes. Although rare, cancer-associated TMA often leads to fatal outcomes due to tumor cell-induced endothelial injury, microvascular obstruction from metastases, and extensive bone marrow infiltration. It may be the first sign of undiagnosed cancer but is more frequently seen during progression of known metastatic cancer.

We report a 69-year-old woman with metastatic hormone receptor–positive, human epidermal growth factor receptor 2–negative breast cancer receiving first-line systemic therapy with palbociclib and letrozole who developed severe anemia (HgB 4.1) without bleeding. Despite holding palbociclib under suspicion of associated bone marrow suppression, her anemia and thrombocytopenia (Hgb 5, Plt 71,000) persisted, prompting an extensive workup of her anemia. Laboratory tests revealed erythrocyte destruction, low platelet counts, and the presence of schistocytes characteristic of TMA. Alternative etiologies of TMA including primary causes (thrombotic thrombocytopenic purpura [TTP] and hemolytic uremic syndrome [HUS]) and secondary causes (such as disseminated intravascular coagulation, vitamin B12 deficiency, etc.) were ruled out. Given this, cancer-associated TMA was considered despite CT imaging suggesting a stable tumor burden. Peripheral smear suggested leukoerythroblastic reaction concerning for bone marrow infiltration by cancer not evident on scans. A bone marrow biopsy showed 85% involvement with breast cancer, confirming cancer-associated TMA. The patient declined starting second-line systemic anticancer therapy, opting to wait for next-generation sequencing results for targeted therapy, but died 8 weeks after initial presentation due to cardiac arrest.

This case shows that stable imaging does not rule out cancer progression or cancer-associated TMA. Accurate diagnosis of TMA is crucial, as treatment depends on the underlying cause. Therapies used for other causes of TMA, such as TTP (plasma exchange, steroids) and HUS (eculizumab), are ineffective for cancer-associated TMA, and the only effective treatment is systemic anticancer therapy. Some reports suggest TMA remission can occur after one chemotherapy cycle, but prognosis is poor, with 46.5% of patients dying within one month of diagnosis. Thus, early diagnosis of cancer-associated TMA is essential for timely therapy, improving survival rates and quality of life.

ABSTRACT 39

Hoarseness in Immunocompetent Host – A Rare Etiology

Clinical Vignette

Introduction: Non-tuberculosis mycobacteria (NTM) are being increasingly identified as etiologies of infections in humans. *Mycobacterium avium* complex (MAC) is one of the most common NTM infections and mostly causes pulmonary or skin and soft tissue infections. NTM have been noted to cause infection in atypical locations.

Case: A 71-year-old female presented to ENT with hoarseness and postnasal drip. She received three courses of antibiotics in the previous three months with little improvement. ENT performed flexible laryngoscopy, which revealed a mid-superior lesion on the right vocal cord that projected toward the midline and prevented full closure of the vocal cords with phonation. She also reported a 15lbs weight loss over the previous three months with no persistent fevers, chills, or sweats. Chest CT revealed no evidence of NTM infection.

A direct laryngoscopy with excisional biopsy was performed by ENT. Pathology of the right vocal cord lesion indicated macrophages and inflammatory cells seen with immunostain and numerous mycobacteria within the granulomatous inflammation seen with AFB stain. The patient was initially treated with rifampin and doxycycline and noted some improvement in the dysphonia, until she was no longer able to tolerate the medications due to nausea.

The patient remained concerned about the right vocal cord mass being cancer, thus she self-referred herself to oncology. Oncology referred her to infectious diseases to manage the mycobacterial infection.

At the ID visit, AFB sputum cultures sent were positive for MAC with susceptibility to amikacin, clarithromycin, linezolid, and moxifloxacin. It was recommended that the patient be initiated on multi-drug therapy with azithromycin, ethambutol, and rifampin. The patient opted to decline therapy despite multiple attempts at education due to the prolonged treatment course and a history of nausea with prior antimicrobial treatment. She was eventually lost to follow-up.

Discussion: NTM infections are more prevalent in patients with increasing age or chronic lung disease, both of which are factors exhibited by our patient. MAC is known to cause symptomatic infections of the lower respiratory tract but does not commonly infect the upper respiratory tract. Laryngeal infections due to NTM species are rare but have been reported in previous studies. Only one case report of laryngeal MAC infection was found, and we believe our case is the first reported case of laryngeal MAC infection in a person not on immune suppressant medications. Treatment for MAC involves a multi-drug regimen regardless of

location. This case demonstrates the importance of considering MAC and other non-tuberculosis mycobacteria as

potential infectious agents in laryngeal masses. Failure to consider NTM infection in the differential diagnosis may result in delayed diagnosis and disease progression.

ABSTRACT 40

Title: Mutational Characterization of Grade 3 Oligodendroglioma: Revealed Through the AACR Project GENIE Database

Abstract:

Background: Grade 3 oligodendroglioma, presents as a high-grade central nervous system (CNS) tumor with diagnostic prerequisites of *IDH* mutation and 1p/19q chromosomal codeletion. Multimodality treatment with resection and adjuvant therapeutics is individually adapted to patients, albeit with incomplete genomic analysis. Concentration of treatment on most frequent alterations may lack necessary precision and thus warrant investigating potential novel targets in management and screening through genomic profiling. **Methods:** A retrospective cohort analysis of grade 3 oligodendroglioma samples was undertaken through data originating from the AACR Project GENIE database. **Results:** The foremost mutations present in the 96 samples identified *IDH1* (87.5%), *TERT* (87.5%), *CIC* (79.2%), *NOTCH1* (33.3%), *FUBP1* (29.2%), and *PIK3CA* (24.0%). Infrequent yet significant in drawing subgroup distinctions included enrichment of *NOTCH3* in males, and *TNFRSF14*, *KDM5C*, *GLI1*, *CD79A*, and *POLE* in females. Further enrichment elucidated *SESN1*, *RAD50*, *RPTOR* alterations in Asian patients and *IRS2* mutations in non-White patients. Novel co-occurrences recognized in this limited sample are between *KMT2C* and *APC*, and *BCOR* and *KMT2D*. Metastasis derived samples reflected unique enrichments in *BRAF* ($p = 0.0132$), *EPHA3* ($p = 0.0142$), and *CTCF* ($p = 0.0471$) compared to the primary site. **Conclusions:** This genomic study emphasizes important oncogenic pathways implicated through mutations in grade 3 oligodendrogliomas including PI3K/AKT/mTOR, MAPK/ERK, Notch, and NF-κB, which encourages refined and potential novel therapeutic targeting for greater tumor control. Distinctions in patient subsets and mutational evolution from metastatic samples enhances knowledge of the mutational heterogeneity but presents further opportunities for therapy developments of a more precise nature.

ABSTRACT 41

Title: Trends and Disparities in Secondary Malignant Neoplasms of the Bone: The WONDER Study

Abstract

Introduction

Secondary malignant neoplasm of the bone is a major concern for cancer patients, with rising incidence and significant morbidity and mortality despite advancements in cancer care. Current literature reports the demographic variability, but population-level trends and survivor-specific risk factors remain poorly characterized for bone metastasis. This study aims to provide a comprehensive temporal analysis of the trends and disparities of secondary malignant neoplasms of the bone.

Methods

Deidentified death certificate data from the CDC WONDER database (1999-2019) were analyzed for secondary malignant bone neoplasms (ICD-10 C79.5). Age-adjusted mortality rates per 100,000 were calculated and stratified by gender, age, race, and malignancy site. Temporal trends were assessed using Jointpoint Regression, yielding APCs, AAPCs, and 95% CIs.

Results

Between 1999 and 2023, 424,811 individuals in the U.S. over the age of 25 years had secondary malignant bone neoplasms-related mortality. The overall age-adjusted mortality rate (AAMR) increased from 5.77 (95% CI 5.67 to 5.87) in 1999 to 11.92 (95% CI 11.79 to 12.05) in 2023. The average annual percentage change (AAPC) over this period was 3.28 (95% CI 2.63 to 3.94). The lowest observed AAMR was 4.00 in 2007, and the highest observed AAMR was 11.92 in 2023. From 1999 to 2009, the annual percentage change (APC) in AAMR was -3.62 (95% CI -4.92 to -2.30), followed by a sharp increase between 2009 and 2023 with an APC of 8.52 (95% CI 7.83 to 9.19). The population aged 85 years and older had the highest rate in 2023, with an AAPC of +4.77 (95% CI 3.38 to 4.77). Over the study period, Black individuals had an overall AAPC of 1.53 (95% CI 0.11 to 2.97), White individuals had an AAPC of 2.60 (95% CI 1.61 to 3.60), and Asian or Pacific Islanders had an AAPC of 3.74 (95% CI 1.17 to 6.38). The Average AAMR for the duration of the study period ranged from 36.3 (95% CI 35.7 to 36.9) in Mississippi to 16.1 (95% CI 16 to 16.3) in Florida.

Discussion

Overall, AAMR increased from 1999-2023 at an AAPC of 3.28, though there was a period of decreasing AAMR from 1999-2009 where APC was -3.62. Due to increased rates of screening, it is possible that rates of secondary metastases of the bone have been constant over the years but they were not diagnosed, leading to a false increase in AAMR. Mortality rates were highest in Black individuals in our study, possibly pointing towards discrepancies in cancer screening and treatment between races. In our study, the AAMR was higher in rural than urban areas, which we hypothesize may be due to limited access to treatment, such as surgery. Future studies should focus on the prevention of primary malignancies and minimizing risk factors for the development of secondary malignancies.

ABSTRACT 42

A challenging case of hepatic hydrothorax unresponsive to optimal medical management

Category: Clinical vignette

Introduction

Metabolic dysfunction-associated steatohepatitis (MASH) can commonly progress to cirrhosis and its subsequent complications. Hepatic hydrothorax is a specific category of pleural effusion in patients with decompensated liver cirrhosis that cannot be attributed to a cardiopulmonary process. It is a relatively rare phenomenon, estimated to comprise 2-3% of pleural effusions, but has a high mortality rate. Spontaneous bacterial empyema is a potentially fatal complication occurring in up to 16% of hepatic hydrothorax patients. In this case, we describe a patient with MASH who developed hepatic hydrothorax with spontaneous bacterial empyema and was successfully treated with a transjugular intrahepatic portosystemic shunt (TIPS) procedure.

Case Presentation

A 70 year-old man with a past medical history of decompensated hepatic cirrhosis secondary to MASH, heart failure with preserved ejection fraction, ischemic cardiomyopathy, hypertension, and Type II diabetes mellitus was brought to the hospital with worsening abdominal distention. Labs were remarkable for alkaline phosphatase 433 units per liter (U/L), aspartate aminotransferase (AST) 384 U/L, alanine aminotransferase (ALT) 379 U/L, and creatinine 1.33 milligrams/deciliter (mg/dL) elevated from his baseline creatinine of 0.77 mg/dL. Computed tomography (CT) of the abdomen and pelvis showed ascites in addition to a right hydropneumothorax and large pleural effusion. Pleural fluid studies were consistent with a hepatic hydrothorax with protein <2 grams/deciliter (g/dL), pleural fluid/serum total protein <0.5, pleural fluid/serum lactate <0.6, and serum/pleural fluid albumin gradient >1.1. Polymorphonuclear leukocytes were 780 cells per microliter, meeting criteria for a spontaneous bacterial empyema. A chest tube was placed and initially drained 4 liters over several hours. The patient was also placed on ceftriaxone. The patient's management was further complicated by an acute kidney injury (AKI), which limited diuretic use. Despite attempts at medical management with diuretics, low sodium diet, and talc pleurodesis, the patient continued to have high volume output from his chest tube. TIPS was performed on day 5 of hospitalization**.** Over the next several days, the rate of chest tube output continued to decrease, and the chest tube was removed ten days after the procedure. By twelve days after the procedure, his pneumothorax had resolved, and he was discharged home in stable condition.

Discussion

Hepatic hydrothorax is a diagnosis of exclusion that should be considered in cirrhotic patients presenting with pleural effusion. Hepatic hydrothorax is thought to occur when ascitic fluid migrates through diaphragmatic defects and into the pleural cavity due to elevated intraabdominal pressure and negative pleural cavity pressure. Without treatment, patients develop respiratory failure or spontaneous bacterial pleural empyema. Initial management typically involves management of the ascites. Patients are treated with salt restriction and diuretics. However, a percentage of patients remain refractory to medical management, particularly if they have a further complicating condition, such as in this case where the patient had an AKI. TIPS can be performed in these situations to decrease portal pressure, allowing improved cardiovascular function and restoration of normal renal filtration. Clinicians must be aware of the diagnosis and management of hepatic hydrothorax, particularly as mortality from cirrhosis continues to rise.

Abstract 43

Title: Genomic Landscape of Chondrosarcoma: AACR GENIE Database Study

Introduction

Chondrosarcoma is a rare, malignant neoplasm composed of cartilaginous cells, typically arising from the pelvis or long bones. Prognosis is dependent on tumor location, grade, and surgical resection status, with the 5-year survival for ranging from 53-83% depending on tumor grade.

The most commonly identified gene mutation in chondrosarcoma is in the IDH1/2 gene, present in approximately half of reported cases. EXT1/2, CDKN2A/B, and COL2A1 mutations are also associated with various subtypes of

chondrosarcoma. However, there is no universal agreement on the prognostic implications of any of these gene mutations. Despite advancements in genomic profiling, further research is needed to identify genetic drivers of tumor progression, metastasis, and treatment resistance. This study aims to better characterize the genomics of chondrosarcoma and its subtypes to further the development of screening modalities and targeted therapies.

Methods

We queried the American Association for Cancer Research Project Genomics Evidence Neoplasia Information Exchange (AACR GENIE)® database v17.0-public to select patients with a pathological diagnosis of chondrosarcoma from a larger cohort of bone tumor cases. The dataset incorporated genomic alterations such as somatic mutations, histological subtypes, primary vs metastatic, and demographics such as age, sex, and race. Copy number alterations were analyzed along with tumor mutational burden. R/R studio was used to conduct statistical analyses, including chi-square testing and the Mann–Whitney U testing, with a threshold of $p < 0.05$ considered statistical significance.

Results

This study included 281 patients and 309 samples; 60.1% were male, 38.4% were female, and 91.6% were adults. Of the 309 samples, 60.5% were primary and 32.4% were metastatic. From most frequent to least frequent, the most common mutations identified were *IDH1* (26.54%), *TP53* (23.95%), *TERT* (8.09%), *IDH2* (8.09%), *KMT2D* (5.50%), *CDKN2A* (4.21%), *EGFR* (3.56%), *ATRX* (3.56%), *BCOR* (3.56%), and *PITCH1* (3.56%).

Female patients were found to have a significant enrichment in *MT-ND5* ($p = 0.0140$) while the E*WSR1* was found to occur significantly higher in males ($p = 0.0462$). *FLYWCH1* and *HIST1H1D* were exclusively seen in White patients ($p = 0.0174$), and *CSF1R* was exclusively seen in non-white individuals ($p = 0.0213$).

Mutual exclusivity was confirmed with *IDH1* and *IDH2* ($p = 0.004$). Novel co-occurrence was found between KMT2D with ATRX ($p = 0.003$) and BCOR with PTCH1 ($p = 0.036$). TPR was exclusively found in primary tumors ($p = 0.0235$), and genes found to be enriched more in metastatic tumors include EWSR1 ($p = 0.0283$), FIP1L1 ($p = 0.0291$), FANCA ($p = 0.0370$), PTPRD ($p = 0.0380$).

Conclusion

MT-ND5 in females and EWSR1 in males may play a role in the discrepancy in the incidence of chondrosarcoma between sexes. Significant co-occurrence between KMT2D with ATRX, and BCOR with PTCH1 suggests a role in tumor progression of chondrosarcoma. These results expand the understanding of chondrosarcoma genomics and establish a groundwork for further studies on prognostics and targeted therapies.