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GME Consortium Abstract Submissions

KCU RESEARCH SYMPOSIUM - 2026

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ADCS Dermatology

KCU Research Symposium 2026

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Mammary Paget Disease Masquerading as Chronic Nipple Eczema

Presenting author: Gavin Cardwell, DO

Co-author: Patrick Dominguez, MD – ADCS Orlando

Introduction: Mammary Paget disease is a rare presentation of breast carcinoma that often mimics benign inflammatory dermatoses. This resemblance can lead to delays in diagnosis and treatment, particularly in older patients presenting with chronic or treatment-refractory breast lesions.

Case: A 77-year-old woman presented with a mildly pruritic, slowly enlarging violaceous annular plaque involving the right breast that had been present for over one year. She was evaluated by a physician 10 months prior and was clinically diagnosed with nipple eczema. Treatment with topical betamethasone ointment applied twice daily resulted in no clinical improvement. Given the persistence and progression of the lesion, a skin biopsy was performed. Histopathologic examination revealed findings consistent with Paget disease of the breast. Following the diagnosis, the patient was referred to breast oncology at the Orlando Health Cancer Institute for further evaluation and management of underlying malignancy.

Discussion: This case highlights the importance of maintaining a high index of suspicion for mammary Paget disease in older patients with chronic, treatment-refractory eczematous or annular breast lesions. Early biopsy of atypical or non-responsive breast dermatoses is essential to avoid diagnostic delay and to ensure timely oncologic referral.

A Rare Presentation of Markel Cell Carcinoma on the Heel of the Foot: A Case Report

Presenting author: Nathaniel Marroquin, DO

Co-authors: Gabriella Beharry, BS - University of Kentucky College of Medicine, Fernando de Castro, MD - Dermatology Associates of Kentucky, Maheera Farsi-Morgan, DO - Dermatology Associates of Kentucky

Introduction: Merkel cell carcinoma (MCC) is a rare, aggressive neuroendocrine skin malignancy most commonly affecting sun-exposed areas in elderly or immunocompromised patients. Established risk factors include ultraviolet radiation, Merkel cell polyomavirus (MCPyV), and immunosuppression. MCC arising in non-sun-exposed locations is uncommon and may delay diagnosis due to low clinical suspicion.

Case: A 66-year-old female with a significant oncologic history, including cervical, anal, and cutaneous squamous cell carcinoma, presented for routine dermatologic evaluation. Examination revealed a suspicious lesion on the heel, an atypical and non-sun-exposed site for MCC. Histopathologic analysis demonstrated sheets of small blue cells with high mitotic activity. Immunohistochemical staining was positive for cytokeratin 20 and MCPyV, confirming the diagnosis of MCC. The patient underwent Mohs micrographic surgery, achieving clear margins

in a single stage. Postoperative positron emission tomography imaging showed no evidence of regional or distant metastasis.

Discussion: This case highlights an unusual presentation of MCC on the heel, emphasizing the importance of maintaining a high index of suspicion for MCC even in non-sun-exposed areas, particularly in high-risk patients with prior malignancies or immunosuppression. Early recognition and prompt histologic evaluation are critical given the aggressive nature of MCC. Additionally, this case supports the use of Mohs micrographic surgery as an effective treatment modality for achieving margin control while preserving tissue in anatomically sensitive locations. Increased awareness of atypical presentations may aid in earlier diagnosis and improved outcomes.

Developing Boards Relevant Material - A Guide To Treatment for Actinic Keratosis American Academy of Dermatology Boards Fodder

Presenting author: Nathan Marroquin, DO

Co-authors: Shannon Hart, DO – KCU GME Consortium/ADCS Orlando Dermatology Residency Program, Gavin Cardwell, DO – KCU GME Consortium/ADCS Orlando Dermatology Residency Program

Introduction: Actinic keratoses (AKs) are common premalignant lesions resulting from chronic ultraviolet exposure and represent a significant risk factor for cutaneous squamous cell carcinoma. Given the breadth of available lesion-directed, field-directed, and combination therapies, familiarity with treatment mechanisms, efficacy, and limitations is essential for dermatology trainees and practicing clinicians.

Materials and Methods: A narrative review of FDA-approved, off-label, and historical treatments for actinic keratosis was conducted using dermatology textbooks, peer-reviewed literature, and American Academy of Dermatology guidelines. Therapies were organized into topical field therapies, photodynamic therapy modalities, destructive techniques, and laser-based interventions. Key features including mechanism of action, effectiveness, and common adverse effects were summarized.

Results: Topical field therapies such as 5-fluorouracil, imiquimod, diclofenac, tirbanibulin, and combination 5-fluorouracil with calcipotriene demonstrate variable efficacy, with 5-fluorouracil-based regimens showing among the highest clearance rates. Photodynamic therapy, particularly BF-200 ALA with red light, offers high field clearance and favorable cosmetic outcomes, while lesion-directed therapies such as cryotherapy and curettage remain effective for isolated or hyperkeratotic lesions. Procedural and laser-based treatments provide additional options for patients with extensive field cancerization.

Discussion: The wide range of AK therapies can be challenging for residents to synthesize for clinical decision-making and board preparation. This poster consolidates high-yield treatment

information into an accessible, comparative format designed to support efficient board study and reinforce guideline-based management principles.

Conclusion: This educational poster serves as a practical reference for dermatology residents, facilitating rapid review of actinic keratosis treatments and enhancing board-focused understanding of AK management.

Hand Nerve Blocks – American Academy of Dermatology Boards Fodder

Presenting author: Gavin Cardwell, DO

Co-authors: Nate Marroquin, DO - KCU GME Consortium/ADCS Orlando Dermatology Residency Program, Shannon Hart, CO - KCU GME Consortium/ADCS Orlando Dermatology Residency Program

Introduction: Hand nerve blocks are essential procedural skills in dermatology, enabling effective anesthesia for surgeries and procedures involving the digits and hand. Despite their importance, dermatology trainees often receive limited structured education on the precise sensory anatomy and injection techniques required for safe and effective nerve blockade. This project aimed to develop a concise, board-relevant educational review with original diagrams to improve dermatology residents' understanding of hand sensory innervation and practical nerve block performance.

Materials and Methods: A comprehensive review document was created using authoritative dermatology sources, including Dermatology, 5th Edition by Bolognia et al. and Review of Dermatology, 2nd Edition. Sensory distributions, key anatomic landmarks, injection sites, technique details, recommended anesthetic volumes, and procedural pearls were systematically compiled for the median, ulnar, radial (superficial branch), digital, ring, and web space nerve blocks. Original diagrams were developed to visually map cutaneous innervation and correlate it directly with injection landmarks to enhance spatial understanding for learners.

Results: The resulting review integrates high-yield anatomic detail with practical procedural guidance in a concise, tabular format. The document emphasizes clinically relevant landmarks at the wrist and digits, safe injection depths, appropriate anesthetic volumes, and common pitfalls such as intravascular injection and incomplete coverage. The inclusion of custom diagrams provides a clear visual reference that aligns nerve territories with precise injection sites.

Dermatofibrosarcoma Protuberans (DFSP): A case of a CD34-Positive DFSP without PDGFB Rearrangement

Presenting Author: Shannon Hart, DO

Co-Authors: Chloe Fernandez, DO - KCU GME Consortium/ADCS Orlando Dermatology Residency Program, William Steffes, MD - ADCS Orlando Dermatology

Introduction: Dermatofibrosarcoma protuberans is an uncommon, locally aggressive soft-tissue tumor characterized by diffuse CD34 expression and a COL1A1-PDGFB fusion due to a t(17;22) translocation. We present a unique case of DFSP arising at the site of a prior excision of malignant melanoma, with atypical molecular findings.

Case: A 47-year-old male with a history of malignant melanoma of the left posterior shoulder, excised approximately 20 years earlier, presented for routine full-body skin examination. He reported a progressively enlarging, painless subcutaneous nodule within the prior surgical scar that developed over one year. Physical examination revealed a 2.5-cm mobile, firm nodule at the previous excision site. Given concern for melanoma recurrence, a punch biopsy was performed, revealing a CD34-positive spindle cell neoplasm with scattered ectatic vessels. Immunohistochemical stains for melanocytic, epithelial, histiocytic, and muscle markers were negative. Fluorescence in situ hybridization (FISH) for PDGFB rearrangement was also negative, an atypical finding given that over 90% of DFSP cases harbor this alteration. The differential diagnosis included DFSP lacking PDGFB rearrangement and other CD34-positive fibroblastic neoplasms, and complete excision was recommended. Subsequent excisional biopsy with 5-mm margins demonstrated Dermatofibrosarcoma protuberans with strong CD34 positivity. The pathologist noted that a small subset of DFSP cases may lack detectable PDGFB rearrangement. Deep margins were positive, and the patient was referred to surgical oncology for definitive management.

Discussion: DFSP has been reported to arise at sites of prior trauma or scarring, including surgical excisions, though the mechanism remains unclear. Only rarely does DFSP occur at melanoma excision sites. This case highlights the importance of maintaining suspicion for secondary malignancies arising within surgical scars and recognizing that DFSP may occasionally lack classic molecular findings. Close clinical surveillance is planned to monitor for recurrence of both DFSP and melanoma.

Enhancing Dermatology Rotation Preparedness: A Quality Improvement Initiative for Medical Students

Presenting Author: Shannon Hart, DO

Co-Authors: Gavin Cardwell, DO - KCU GME Consortium/ADCS Orlando Dermatology Residency Program, Nate Marroquin, DO - KCU GME Consortium/ADCS Orlando Dermatology Residency Program, Jere Mammino, DO - KCU GME Consortium/ADCS Orlando Dermatology Residency Program

Introduction: Dermatology is a highly competitive specialty requiring early exposure and strong foundational knowledge. However, dermatology education in osteopathic (DO) medical schools is variable and often limited, potentially leaving students underprepared for audition rotations and residency. This study evaluated the adequacy of dermatology education among DO medical students and applicants and identified gaps in pre-rotation preparation.

Materials and Methods: An anonymous cross-sectional survey was distributed to DO medical students and recent dermatology residency applicants. The survey assessed preclinical dermatology exposure, access to electives, expectations prior to audition rotations, perceived preparedness, and self-study resources. Quantitative data were summarized using descriptive statistics, and free-text responses were analyzed thematically.

Results: Thirteen respondents completed the survey. Although 61.5% reported receiving four or more dermatology-specific lectures during the first two years of medical school, an equal proportion expressed dissatisfaction with their dermatology curriculum prior to audition rotations. Only 38.5% felt adequately prepared entering auditions. Prior to auditions, 23.1% completed no dermatology elective rotations, and 84.6% independently contacted dermatologists to secure electives without institutional support. More than half of respondents (53.8%) reported that their medical school did not provide clear expectations for dermatology rotations. Qualitative responses emphasized a preference for hands-on learning, increased patient involvement, and structured teaching. Common barriers included excessive shadowing, inconsistent attending teaching styles, and limited guidance. Frequently used preparatory resources included American Academy of Dermatology modules, dermatology textbooks, podcasts, and self-directed study.

Conclusion: Despite strong interest in dermatology, DO students reported inadequate institutional support and inconsistent preparation for audition rotations, leading to heavy reliance on self-directed learning. These findings highlight the need for a structured pre-residency dermatology curriculum to standardize foundational knowledge and improve preparedness for clinical rotations.

Tattoo-Preserving Strategies in Dermatologic Surgery: A Case Series

Presenting Author: Jay Nguyen, DO

Co-Authors: Jay Nguyen, DO - KCU GME Consortium/ADCS Orlando Dermatology Residency Program, Summer Wong, DO - Memorial Regional Hospital, Aysham Chaudry, DO - Center for Clinical and Cosmetic Research, Jason Mammino, DO - Cara Mia Dermatology, Jere Mammino, DO - KCU GME Consortium/ADCS Orlando Dermatology Residency Program

Background: Tattoos are highly prevalent among US adults. Both benign and malignant skin neoplasms are commonly found within tattooed skin. The literature emphasizes tumor biology and oncologic management, but it gives limited attention to reconstructive strategies that preserve tattoo integrity.

Objective: To describe practical surgical approaches that take into consideration tattoo preservation while still maintaining oncologic safety.

Methods: We present a case series of three patients with neoplasms arising within tattooed skin. Surgical management emphasized standard margin control, strategic excision orientation, selective deviation from relaxed skin tension lines when appropriate, and a layered closure technique to reduce tension and minimize pigment distortion.

Results: Complete tumor removal was achieved in all cases without complications. Reconstructive approaches include fusiform excisions, S-plasty, and bilayered closures with careful alignment of tattoo lines. All patients demonstrated favorable cosmetic outcomes with minimal disruption of tattoo design at follow-up.

Conclusion: Tattoo-preserving dermatologic surgery is feasible, reproducible, and oncologically sound. Intentional preoperative planning and meticulous closure techniques allow integration of aesthetic considerations into skin cancer management, supporting a more patient-centered reconstructive approach.

Freeman Emergency Medicine

KCU Research Symposium 2026

Title	Presenting Author	Category
Multiple Copperhead Bites in the Upper Extremity of an Adult Female	Dr. Nathan Piccoli	Case Report
What if all answers are wrong? Internal error rate in Emergency Medicine practice In-Training Exams	Dr. Jay Reynolds	Research
VIP Syndrome - Deviation from standard of care resulting in delays in diagnosis and treatment	Dr. Daniel Wright	Case report
Spontaneous Adrenal Hemorrhage	Dr. David Jeffs	Case Report

Multiple Copperhead Bites in the Upper Extremity of an Adult Female

Presenting author: Nathan Piccoli, DO

Co- author: Richard Swinney, MD - KCU GME Consortium/Freeman Health Emergency Medicine

Introduction: In the United States, estimates of venomous snakebites range from 2000 - 8000 per year, with the vast majority being from crotalids (rattlesnakes, copperheads, cottonmouths); envenomations from coral snakes and exotic (non-indigenous) snakes constitute less than 3% of reported U.S. envenomations annually.

Case: A 46 year old female presented to the Emergency Department via ambulance for evaluation of 3 bites from a copperhead snake (Agkistrodon contortrix) to her right upper extremity, which subsequently developed severe pain and moderate progressive ascending swelling. The patient was admitted for administration of crotalidae polyvalent immune Fab, monitoring and pain control. The patient also reported having been bitten by a "diamondback" in the right leg as a child and having received antivenom at that time.

Discussion: The treatment of choice for significant envenomation is crotalidae polyvalent immune Fab, titrated to the patient's symptoms. Potential complications of envenomation include coagulopathy and compartment syndrome, the latter being particularly challenging due to the extensive overlap of symptoms with the envenomation itself. Potential major complications of treatment with crotalidae polyvalent immune Fab include acute allergic reaction and serum sickness. While venomous snakebite mortality rates in the U.S. are low (<0.5%), due to the cost of crotalidae polyvalent immune Fab, even a brief hospitalization for envenomation can easily result in hospital charges ranging from tens of thousands to upwards of one hundred thousand dollars per patient, making both the physical and fiscal impacts of such incidents profound.

What if all answers are wrong? Internal error rate in Emergency Medicine practice In-Training Exams

Presenting author: Jay Reynolds, DO

Co- author: Richard Swinney, MD - KCU GME Consortium/Freeman Health Emergency Medicine

Introduction: Performance on American Board of Emergency Medicine ITE / Qualifying Exams (written boards) has been declining nationwide since 2018 / 2019. While this phenomenon is likely multifactorial and includes changes in residency training made during and after the COVID-19 pandemic, the quality of readily available test preparation material is another potential source for the declining pass rate.

Materials and Methods: Systematic analysis of two Mock ITE examinations from Foundations of Emergency Medicine (a commonly used resource for emergency medicine residency training) was performed.

Results: More than 8% of the answers in these two Mock ITE examinations were found to be arguably if not unequivocally incorrect.

Discussion: An 8+% rate of inaccuracy in commonly used professional training materials is inexcusable and unacceptable. This level of inaccuracy is likely a contributing factor to falling ITE / Qualifying Exam scores nationwide.

Conclusion: Given these findings, Emergency Medicine residency programs should consider a comprehensive systematic review of the test preparation materials they use.

VIP Syndrome – Deviation from standard of care resulting in delays in diagnosis and treatment

Presenting author: Daniel Wright, DO

Co-author: Richard Swinney, MD - KCU GME Consortium/Freeman Health Emergency Medicine

Introduction: Coined by Dr. Walter Weintraub in 1964, "VIP Syndrome" is the inclination of a physician to provide special treatment to a patient because of that patient's status or wealth. Deviation from standards of care may include expedited evaluation, changing normal patterns of testing and treatment, increased staff attentiveness to pain control, privacy, etc. Cutting corners in care and / or disproportionately allocating resources due to "VIP" patients should be avoided.

Case: A 61 year old ER physician skydiver sustained a high velocity pelvic injury during a mid-air parachute malfunction. After cutting away the malfunctioning main parachute, the reserve parachute was deployed and he landed normally on the drop zone. The patient was transported to a Level 1 Trauma Center where he was treated by several former colleagues. No initial plain x-ray of the pelvis was performed. CT's of the lumbar spine, abdomen and pelvis with IV contrast demonstrated a 5.5 cm diastasis of the pubic symphysis, as well as diastasis and fracture of the left sacroiliac joint. The time from ER arrival to diagnosis was more than 2 hours. The time from ER arrival to effective stabilization was almost 6 hours.

Discussion: The ER staff underestimated the severity of injury. Deviation from standard ATLS protocol resulted in significant delay in diagnosis and treatment. The diagnosis should have been made on initial pelvic x-ray after the secondary survey. The pelvis should have been immobilized appropriately and subsequently confirmed with portable x-rays to avoid repeatedly moving this patient with an unstable pelvic fracture. The unreliability of the pain scale and the need to base clinical decision-making on mechanism of injury will be discussed. The importance of awareness and avoidance of VIP syndrome will be discussed. The imperative of quickly diagnosing and effectively immobilizing pelvic fractures will also be discussed.

Spontaneous Adrenal Hemorrhage

Presenting author: David Jeffs, DO

Co-author: Richard Swinney, MD - KCU GME Consortium/Freeman Health Emergency Medicine

Introduction: Patients who present to the Emergency Department with unexplained, undifferentiated abdominal / back pain and markedly abnormal vital signs warrant a thorough, rapid assessment as the differential diagnosis is broad and their symptoms may constitute an immediate life threat.

Case: A 27 year old female presented initially to Urgent Care and was immediately referred to the Emergency Department with a 2 day history of urinary frequency and atraumatic pelvic, back and rib pain. On presentation, the patient was tachycardic (140s) and hypertensive (176 / 96). Lab results were notable for a mild leukocytosis (14.3) with 80% neutrophils and an elevated lactic acid level (3.7), but were otherwise unremarkable. CT's of the chest, abdomen and pelvis were remarkable only for a 6.3 x 5.7 left upper pole mass likely representing unilateral left adrenal hemorrhage. The patient was admitted for monitoring, further evaluation and treatment.

Discussion: Atraumatic spontaneous adrenal hemorrhage is relatively rare; it has multiple causes, including infection / sepsis, anticoagulant use, acute stress, pregnancy, surgery, malignancy and autoimmune disorders. Due to its nonspecific symptoms, spontaneous adrenal hemorrhage can be quite difficult to diagnose, requiring a high index of suspicion and early diagnostic imaging. Timely identification and treatment of any associated underlying etiology is essential, as some causes are life threatening in the near term, while others pose a less acute but equally mortal threat.

Freeman Family Medicine

KCU Research Symposium 2026

Title	Presenting Author	Category
Promotion of breastfeeding by improving access to lactation spaces at Freeman Health System	Dr. Ashley McCleary	Quality Improvement
Improving Well Woman Exam Efficiency and Comfortability in an Academic Family Medicine Clinic	Dr. Kayla Wooldridge	Quality Improvement
Ultra-responder to GIP/GLP-1 therapy (Tirzepatide)	Dr. Robert Morris	Case Report

Promotion of breastfeeding by improving access to lactation spaces at Freeman Health System

Presenting author: Ashley McCleary, DO

Co-author: Barbara Miller, MD - KCU GME Consortium/Freeman Health Family Medicine

Funding: The authors received the Workplace Lactation Mini Grant from the Missouri Department of Health.

Introduction: Working mothers often face many challenges to continue breastfeeding their children including a lack of access to an appropriate pumping space. Without a dedicated lactation space, employees may feel unsupported by their workplace, unsafe to pump, and experience increased levels of stress and mental health challenges. 79% of the Freeman Neosho workforce is female, and 74% of those are of childbearing age. Historically, there have been no dedicated lactation spaces at the Neosho clinic for employees, including family medicine residents.

Materials and Methods: To improve access to lactation spaces, the Missouri Department of Health's Workplace Lactation Mini Grant in the amount of $500 was sought through an application process. Utilizing the awarded grant money, an available lactation space for all employees at the Neosho clinic was developed. An appropriate space was identified for use within the clinic, one which would provide privacy and ample space for a comfortable chair, side table, and refrigerator. The room chosen was refurnished with a locking door that indicates whether the room is in use or not.

Results: The awarded money was used to purchase a chair, table, clock, and lamp for the lactation room. The clinic was awarded the Missouri Breastfeeding Friendly Worksite award by the MO Department of Health and Senior Services.

Discussion: Next step would be encouraging creation of additional lactation spaces across Freeman Health System to improve employee satisfaction and, in turn, retention rates. Further project expansion could include community-based participatory research to evaluate for other barriers employees and patients face while pumping and breastfeeding.

Conclusion: By improving access to lactation spaces, breastfeeding is encouraged for the working moms at Freeman Neosho, which will promote the health and well-being of these employees and their families.

Improving Well Woman Exam Efficiency and Comfortability in an Academic Family Medicine Clinic

Presenting author: Kayla Wooldridge, DO

Co-authors: Timothy Mayes, DO – KCU GME Consortium/Freeman Health Family Medicine, Troy D'Amour, DO - Freeman Health System, Barbara Miller, MD - KCU GME Consortium/Freeman Health Family Medicine

Introduction: With lower access to women's health providers, patients rely on family medicine clinics for their Well Woman Exams (WWE); a procedure which includes an in-depth history, breast cancer screening, and cervical cancer screening. The goal of this project is to improve the process of the WWE, to increase clinic efficiency and resident satisfaction.

Materials and Methods: A standardized WWE Form was created that collected health history. Additionally, an outline for staff described the expected flow of the exam. Family Medicine Residents and clinic staff were surveyed before and after implementation using a Likert scale survey.

Results: Results showed implementation of the standardized form improved perceived efficiency and flow of the WWE by residents and staff. All surveyed staff (n=3) and residents (n=3) "strongly agreed" that clinic efficiency and flow of the visit were improved post-intervention. Staff noted it was easier to obtain information from patients and residents noted improvement in documentation quality. These residents also noted that the form made difficult topics easier to discuss with patients. Lastly, two out of three Residents strongly agreed that this form would reduce their risk of burn out.

Discussion: Family medicine clinics increasingly serve as the primary access point for healthcare needs, particularly in Medically Underserved Areas such as Jasper County, Missouri. Results show implementation of a standardized patient intake form with outline of the exam for staff can have positive impacts. Limitations included a short data collection phase and limited survey sample size. Ongoing research should include multiple clinic sites, and a patient satisfaction component.

Conclusion: Implementation of a WWE Form and outline for staff increased efficiency, improved flow, and quality of WWE performed in our continuity clinic. Further implementation may improve quality and access to women's health care in the Joplin Community.

Ultra-responder to GIP/GLP-1 therapy (Tirzepatide)

Presenting author: Robert Morris, DO

Co-authors: Sanjana Mazumdar – Kansas City University College of Medicine, Caleb Thomas - Missouri Southern State University, Justin Dillingham, DO – Freeman Health Family Medicine, Joseph Sheppard, DO – Freeman Health Family Medicine, Barbara Miller, MD - KCU GME Consortium/Freeman Health Family Medicine

Introduction: Dual agonist therapies, such as Tirzepatide (Mounjaro), have known weight-loss properties. By mimicking the endocrine activity of both glucose-dependent insulinotropic polypeptide (GIP) and glucagon-like peptide-1 (GLP-1), this dual agonist helps manage type 2 diabetes and obesity. Also. the attachment of a C20 fatty diacid moiety increases its half-life to 5 days, and allows for once weekly subcutaneous dosing. The mechanisms of action is thought to increase insulin secretion, lower glucose production, slow gastric emptying, and promote satiety leading to weight loss. Previous clinical studies of Tirzepatide demonstrate patients reduce body weight by an average of 20.9% to 22.5% over 72 weeks.

Case Description: In this case study, we show evidence of a female patient in the 4th decade of life who decreased 55.3% of her body weight (363 to 162 lbs; or 165 to 73 kg) and reduced BMI from 58.8 to 26.2 kg/m2 over 80 weeks after starting Tirzepatide. Weekly dosing of Tirzepatide began at 2.5 mg, peaked at 10 mg, and decreased to 5 mg maintenance dose. In addition to body weight, other cardiovascular risk factors improved including random glucose (213 to 90 mg/dl), A1C% (6.4% to 4.9%), clinic blood pressure (initial:150/82, end:128/80 mmHg) and cholesterol (231 to 164 mg/dl) during the course of Tirzepatide treatment.

Discussion: We aimed to further characterize this "ultra-response" (more than doubling of the average response) by asking the patient to identify lifestyle factors that may have contributed, such as caloric intake and physical activity habits. We asked about these habits both before and after starting Tirzepatide. Of note, the patient required an uncomplicated robot-assisted laparoscopic cholecystectomy at week 56 of the 80-week study period. This was most likely related to rapid weight loss.

Freeman Internal Medicine

KCU Research Symposium 2026

Title	Presenting Author	Category
Methotrexate-Induced Pneumonitis in a 71-Year-Old Female with Rheumatoid Arthritis: A Case Report	Dr. Jacob Delcoure	Case Report
Acute on chronic aortoiliac occlusion with bilateral limb ischemia complicating high-risk NSTEMI and stress cardiomyopathy	Dr. Abhishek Premkumar	Case Report
High-risk multivessel Percutaneous Coronary Intervention complicated by retroperitoneal hemorrhage, limb ischemia, and antiplatelet resistance	Dr. Abhishek Premkumar	Case Report
Paget-Schroetter syndrome revealing venous thoracic outlet syndrome in a young woman	Dr. Abhishek Premkumar	Case Report
Filamin C-associated dilated cardiomyopathy with transient functional improvement and fatal ventricular arrhythmia despite multidisciplinary care	Dr. Abhishek Premkumar	Case Report
Metastatic triple-positive male breast cancer: diagnostic, genomic, and multidisciplinary management in a 44-year-old man	Dr. Sophia Day	Case Report

Methotrexate-Induced Pneumonitis in a 71-Year-Old Female with Rheumatoid Arthritis: A Case Report

Presenting Author: Jacob Delcoure, DO

Co-Authors: Adam Gregni – KCU College of Osteopathic Medicine, Michael Weaver, DO – Freeman Health Internal Medicine

Introduction: Methotrexate (MTX) is a cornerstone therapy in the treatment of rheumatoid arthritis (RA) and is associated with rare but potentially life threatening pulmonary toxicity. Diagnosing MTX induced pneumonitis remains challenging due to its non specific clinical presentation and overlap with infectious or neoplastic causes. Early identification is essential, as timely cessation of the drug and corticosteroid initiation can result in rapid clinical improvement.

Case Description: We present a case of a 71 year old female with longstanding RA treated with MTX and etanercept who developed worsening shortness of breath, dry cough, and hypoxia over seven days. Initial evaluation suggested community-acquired pneumonia, and she was treated empirically with antibiotics without improvement. On admission, she was afebrile but hypoxic with bibasilar crackles. Laboratory workup revealed peripheral eosinophilia and elevated calcium. Infectious causes were excluded with negative respiratory viral PCR and procalcitonin. Chest CT demonstrated bilateral interstitial infiltrates and mild lymphadenopathy. Given her MTX use, radiologic findings, and lack of infection, MTX induced pneumonitis was suspected. MTX and etanercept were discontinued, and intravenous corticosteroids initiated. Over the following 72 hours, the patient experienced significant improvement in oxygenation and resolution of eosinophilia. She was discharged with a steroid taper and rheumatology follow up.

Discussion: This case underscores the diagnostic complexity of methotrexate induced lung injury, particularly in elderly patients with comorbidities. Radiologic and clinical features often mimic infections or malignancy, complicating diagnosis. Peripheral eosinophilia may be a useful clue, supporting a hypersensitivity mechanism. Clinicians should maintain a high index of suspicion for MTX pneumonitis in RA patients presenting with new pulmonary symptoms, especially in the absence of infection.

Acute on chronic aortoiliac occlusion with bilateral limb ischemia complicating high-risk NSTEMI and stress cardiomyopathy

Presenting Author: Abhishek Premkumar, DO

Co-Authors: Andrew Greek, BS - KCU College of Osteopathic Medicine, Suji Baskar, DO – KCU GME Consortium/Freeman Health System, Damandeep Kapoor, BS - KCU College of Osteopathic Medicine, Nur Irfan, BS - KCU College of Osteopathic Medicine, Christopher Foth, DO – Freeman Health Internal Medicine

Introduction: Acute on chronic distal aortic or aortoiliac occlusion is a rare and life-threatening vascular emergency that may present with limb ischemia, shock, and multiorgan failure. Diagnosis may be delayed in critically ill patients, particularly when presentation is confounded by cardiac arrest, various electrocardiographic changes, and myocardial injury. Early recognition is essential, as morbidity and mortality remain high.

Case Description: A 60-year-old man presented after out-of-hospital cardiac arrest with return of spontaneous circulation following defibrillation and prolonged cardiopulmonary resuscitation. Initial electrocardiograms demonstrated minimal ST-segment elevations that did not consistently meet ST-elevation myocardial infarction criteria. Troponin levels rose markedly, prompting treatment for high-risk non-ST-segment elevation myocardial infarction. Coronary angiography was attempted via femoral access but was unsuccessful due to bilateral common femoral artery occlusion, raising concern for severe peripheral arterial disease. Radial access was obtained, revealing a severe but non-flow-limiting mid left anterior descending artery stenosis. Left ventriculography and echocardiogram showed apical hypokinesis with basal hyperkinesis consistent with stress-induced cardiomyopathy. Given absent lower extremity pulses and profound hypoperfusion, vascular ultrasound was performed and demonstrated acute on chronic occlusion extending from the aortoiliac segment through the femoral arteries bilaterally. The patient underwent catheter-directed thrombolysis for limb salvage but developed rhabdomyolysis, acute renal failure, and progressive shock. His course was further complicated by retroperitoneal hemorrhage requiring cessation of thrombolysis and blood product resuscitation. Despite aggressive multidisciplinary care, he developed multiorgan failure and died following goals-of-care discussions.

Discussion: This case highlights the diagnostic and therapeutic challenges of managing acute on chronic aortoiliac occlusion in the setting of cardiac arrest and myocardial injury. Severe peripheral arterial disease may remain clinically silent until critical hypoperfusion occurs. Failed femoral access and abnormal physical examination findings should prompt urgent vascular evaluation. Management requires balancing limb salvage against hemorrhagic risk, emphasizing the importance of early multidisciplinary coordination and shared decision-making in high-risk patients.

High-risk multivessel Percutaneous Coronary Intervention complicated by retroperitoneal hemorrhage, limb ischemia, and antiplatelet resistance

Presenting Author: Abhishek Premkumar, DO

Co-Authors: Andrew Greek, BS - KCU College of Osteopathic Medicine, Damandeep Kapoor, BS - KCU College of Osteopathic Medicine, Nur Irfan, BS - KCU College of Osteopathic Medicine, Christopher Foth, DO – Freeman Health Internal Medicine

Introduction: Patients with complex multivessel coronary artery disease who are poor surgical candidates present a significant revascularization challenge. High-risk percutaneous coronary intervention (PCI) with mechanical circulatory support may be pursued but carries substantial risk of vascular, bleeding, and ischemic complications. Early recognition and multidisciplinary management are critical to optimize outcomes.

Case Description: A 75-year-old woman with a history of prior PCI, hypertension, and atrial fibrillation presented with progressive dyspnea. Coronary angiography demonstrated complex multivessel coronary artery disease involving the left main and left anterior descending arteries. Coronary artery bypass grafting was deferred due to severe pulmonary hypertension. She underwent high-risk PCI with mechanical support via femoral access. The procedure was complicated by a retroperitoneal hemorrhage secondary to femoral artery injury, resulting in acute lower extremity ischemia. Endovascular stenting of the femoral artery was performed with restoration of distal flow. Her hospital course was further complicated by second-degree atrioventricular block and rising cardiac enzymes. Platelet function testing demonstrated poor response to clopidogrel, prompting escalation to ticagrelor, which was later transitioned to prasugrel due to dyspnea. Anticoagulation was temporarily held due to active bleeding. The patient spontaneously converted to sinus rhythm, with improved clinical status, and was discharged home.

Discussion: This case highlights the complexity of managing high-risk PCI in patients who are not surgical candidates. Vascular access complications remain a major source of morbidity and require prompt recognition to prevent limb and life-threatening consequences. Platelet function testing can play an important role in guiding antiplatelet therapy in patients with suspected resistance, particularly in the setting of competing thrombotic and hemorrhagic risks. Successful outcomes in such cases depend on timely intervention and close collaboration among interventional cardiology, vascular team, and critical care service.

Paget-Schroetter syndrome revealing venous thoracic outlet syndrome in a young woman

Presenting Author: Abhishek Premkumar, DO

Co-Authors: Andrew Greek, BS - KCU College of Osteopathic Medicine, Damandeep Kapoor, BS - KCU College of Osteopathic Medicine, Nur Irfan, BS - KCU College of Osteopathic Medicine, Christopher Foth, DO – Freeman Health Internal Medicine

Introduction: Primary upper extremity deep vein thrombosis, also known as Paget-Schroetter syndrome, is a rare condition that typically affects young, otherwise healthy individuals. It most commonly involves the axillary or subclavian veins and is frequently associated with venous thoracic outlet syndrome (VTOS) due to extrinsic venous compression. Early recognition is essential to prevent recurrent thrombosis and long-term morbidity.

Case Description: A 35-year-old woman with no significant past medical history presented with acute right upper extremity swelling. She denied trauma, repetitive overhead activity, hormonal therapy use, smoking, or recent infection. Duplex ultrasonography demonstrated acute thrombosis of the right axillary and distal subclavian veins. She underwent catheter-directed thrombectomy with intravascular ultrasound, which revealed significant subclavian vein compression beneath the clavicle consistent with venous thoracic outlet syndrome. A hypercoagulable evaluation was unremarkable. The patient was initiated on apixaban and observed without complication. She was discharged with outpatient follow-up and recommendations for further evaluation and management of VTOS.

Discussion: Paget-Schroetter syndrome should be considered in young patients presenting with spontaneous upper extremity deep vein thrombosis, even in the absence of classic precipitating activities. Identification of underlying venous thoracic outlet syndrome is critical, as failure to address mechanical compression increases the risk of recurrent thrombosis and post-thrombotic syndrome. Early intervention with thrombus removal, anticoagulation, and consideration of definitive decompressive therapy can significantly improve outcomes. This case emphasizes the importance of maintaining a broad differential diagnosis and utilizing advanced imaging to identify structural causes of thrombosis. a rare condition that typically affects young, otherwise healthy individuals. It most commonly involves the axillary or subclavian veins and is frequently associated with venous thoracic outlet syndrome (VTOS) due to extrinsic venous compression. Early recognition is essential to prevent recurrent thrombosis and long-term morbidity.

Filamin C-associated dilated cardiomyopathy with transient functional improvement and fatal ventricular arrhythmia despite multidisciplinary care

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Introduction: FLNC-associated dilated cardiomyopathy is a rare genetic condition characterized by progressive ventricular remodeling and a high risk of malignant ventricular arrhythmias, often disproportionate to left ventricular ejection fraction. While guideline-directed medical therapy (GDMT), specialized heart failure clinics, and cardiac rehabilitation may improve functional status, sudden cardiac death remains a major concern.

Case Description: A 62-year-old man with hypertension, hyperlipidemia, coronary artery disease, and chronic atrial fibrillation presented with New York Heart Association class III heart failure. Echocardiography demonstrated severe left ventricular systolic dysfunction with an ejection fraction of 15-20%, severe biatrial and ventricular dilation, and severe functional mitral and tricuspid regurgitation. A strong family history of cardiomyopathy prompted genetic testing, which revealed a pathogenic FLNC mutation. His course was complicated by chronic kidney disease and recurrent admissions for volume overload. He was referred to a multidisciplinary heart failure clinic and enrolled in structured cardiac rehabilitation, with optimization of GDMT and close outpatient monitoring. He initially demonstrated symptomatic improvement; however, he continued to experience progressive volume overload with worsening valvular regurgitation. Ambulatory monitoring during rehabilitation revealed episodes of nonsustained ventricular tachycardia. Cardiac resynchronization therapy was performed, Implantable cardioverter-defibrillator placement was strongly recommended for primary prevention, but the patient declined due to prior family experiences with Implantable Cardioverter Defibrillator (ICD) shocks. He later suffered a ventricular fibrillation arrest and died despite resuscitative efforts.

Discussion: This case highlights the malignant arrhythmic potential of FLNC-associated cardiomyopathy and underscores that transient functional improvement does not eliminate sudden cardiac death risk. Episodes of nonsustained ventricular tachycardia should heighten concern even in patients receiving optimized medical therapy and cardiac resynchronization. Patient-centered shared decision-making, including informed refusal of ICD therapy, is a critical but challenging aspect of cardiomyopathy care. This case emphasizes the importance of early risk stratification, ongoing arrhythmia surveillance, and candid discussions regarding device therapy in patients with FLNC mutations.

Metastatic triple-positive male breast cancer: diagnostic, genomic, and multidisciplinary management in a 44-year-old man

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Introduction: Male breast cancer (MBC) is rare, accounting for less than 1% of all breast cancers, though incidence is rising globally. MBC typically presents at an older age and more advanced stage than female breast cancer, with a median diagnosis age of 64-67 years. Risk factors include age, family history, race, genetic mutations (notably BRCA2), Klinefelter syndrome, radiation exposure, and hyperestrogenism. BRCA2 mutations represent the most common high-penetrance genetic alteration in MBC, conferring a lifetime risk of 1.8-7.1% by age 70 and often associated with more aggressive disease. Other predisposing genes include BRCA1, CHEK2, PALB2, and ATM.

Case Description: A 44-year-old male with gastroesophageal reflux disease and obstructive sleep apnea presented with a chronic right breast lesion of 1-2 years, associated with bleeding, ulceration, and severe right arm pain. Biopsy revealed moderately differentiated infiltrating ductal carcinoma that was ER/PR positive and HER2-positive. Staging demonstrated widespread metastases involving the brain, skull, mediastinal and axillary nodes, lungs, bones, and liver. The patient underwent palliative radiation therapy, next-generation sequencing (NGS) to identify potential targetable mutations, and genetic counseling due to a strong family history of malignancy. During subsequent hospitalizations, he required lumbar kyphoplasty for fragility fractures related to extensive bony metastases.

Discussion: MBC is biologically distinct from female breast cancer, with a predominance of hormone receptor-positive tumors and a strong association with BRCA2 mutations that influence both risk and prognosis. Triple-positive MBC may demonstrate aggressive clinical behavior and often presents at an advanced stage due to limited awareness and absence of routine screening in men. Diagnosis relies on clinical evaluation, imaging, and core biopsy, with universal genetic counseling recommended. NGS-based molecular profiling can identify actionable mutations, including BRCA2, PIK3CA, GATA3, and HER2.

HCA Orthopedic Surgery

KCU Research Symposium 2026

Title	Presenting Author	Category
Gluteal Compartment Syndrome Following Prolonged Immobilization in the Setting of Polysubstance Use: A Two-Patient Case Series	Dr. Daulton Sauce	Case Report
Supplemental medial column screw fixation for distal femur periprosthetic fracture treated with lateral distal locking plate: a case report	Dr. Nicholas Scigliano	Case Report
Idiopathic Presentation of Parsonage-Turner Syndrome in Two Patients: A Case Series	Dr. Logan Drussel	Case Report
Presentation and Technical Application of External Fixator Kickstand with De-rotational Bar Modification	Dr. Speros Gabriel	Research
Opioid Prescribing Patterns Following Isolated Trigger Finger Release: A Single-Institution Quality Improvement Study	Dr. Brandalyn Mathis	Quality Improvement

Gluteal Compartment Syndrome Following Prolonged Immobilization in the Setting of Polysubstance Use: A Two-Patient Case Series

Presenting Author: Daulton Sauce, DO

Co-Authors: Robert Garner, DO – KCU GME Consortium/HCA Midwest Health, Mark Gamadia, KCU College of Osteopathic Medicine, Molly Black, MD – HCA Midwest Health

Introduction: Gluteal compartment syndrome (GCS) is a rare, often overlooked emergency caused by rising compartment pressures leading to muscle and nerve ischemia, frequently after substance-related immobilization. Nonspecific symptoms such as diffuse pain and reduced mobility contribute to delayed diagnosis, increasing risk of irreversible neuromuscular injury and death. Case Summary: Two cases of GCS following polysubstance overdose are presented.

Case 1: A 44-year-old male developed right-sided GCS with extensive gluteal muscle necrosis following delayed diagnosis, initially misattributed to cellulitis. Despite decompressive fasciotomy, he suffered irreversible muscle loss.

Case 2: A 35-year-old male presented with multisite compartment syndrome of the left gluteal, forearm, and lower leg compartments. Prompt recognition and surgical decompression preserved overall tissue viability.

Discussion: Diagnosis of GCS relies on a combination of laboratory findings such as markedly elevated creatinine kinase, and focused physical examination particularly tense gluteal swelling, pain disproportionate to the clinical scenario, and progressive neurological deficits, including sciatic nerve dysfunction or foot drop. Imaging is often nonspecific, and clinical outcomes are dependent highly on early fasciotomy. These cases highlight the variable clinical course of GCS and the diagnostic challenges in patients found immobile after overdose.

Conclusion: Clinicians should remain vigilant of the possibility of GCS in patients immobilized after drug overdose. Early recognition is critical to reducing morbidity and mortality within these patients. Prompt surgical consultation and early fasciotomy are essential to prevent irreversible neuromuscular damage and poor functional recovery.

Supplemental medial column screw fixation for distal femur periprosthetic fracture treated with lateral distal locking plate: a case report

Presenting Author: Nicholas Scigliano, DO

Co-Authors: Brandon Nguyen, DO - HCA Midwest Research Orthopaedic Surgery, Brian Geraghty, DO - HCA Midwest Research Orthopaedic Surgery/Orthopedic Surgeons Incorporated

Introduction: There are many operative treatment options for distal femur fractures. The choice of which option is the best is controversial. Well-described methods of fixation include lateral and/or medial locking plates, condylar screws with side plates, and retrograde

intramedullary nails. Most recently, percutaneous, medial column screw fixation to supplement a lateral locking plate has been reported with great success.

Case Description: Patient is a 64-year-old female without significant medical history who presented to the emergency department after slipping on hardwood floor at home causing significant left leg pain and an inability to stand. She reported having recently undergone left total knee arthroplasty for arthritis by an outside surgeon in November 2025. Radiographs obtained showed a left distal femur periprosthetic fracture and orthopedics was consulted. Non-operative and operative treatment options were discussed the patient was agreeable to operative fixation of her fracture. She underwent open reduction and internal fixation the same day without any complications. She recently presented to the clinic for a two-week follow up visit and she is doing well.

Discussion: Distal femur fractures remain a difficult situation for orthopedic surgeons. Modern lateral locking plates have proved to be quite effective. Despite advances in the implants, nonunion and implant failure rates still occur at a significant rate. In the periprosthetic setting, complication rates are even higher because of implant interference and limited bone stock around femoral components. Addition of a medial plate or a retrograde intramedullary nail to supplement lateral locking plates are gaining support. However, these options increase costs, amount of dissection, and surgical times, which may increase patient morbidity. A team out of the University of Pittsburgh came up with a novel strategy in 2023 in an attempt to address these concerns. This technique offers a cheap, minimally-invasive method of fixation that demonstrates high union rates.

Idiopathic Presentation of Parsonage-Turner Syndrome in Two Patients: A Case Series

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Introduction: Brachial neuritis, otherwise known as Parsonage-Turner Syndrome (PTS), is a rare syndrome in which individuals experience sudden onset unilateral shoulder pain followed by upper extremity motor and sensory deficits to varying degrees. There are a plethora of conditions associated with the onset of PTS, however, there is a paucity of literature about PTS of idiopathic origin.

Case: We present a 29 year-old male with acute right upper extremity pain and weakness and a 70 year-old male with acute left upper extremity pain and numbness, in which neither patient had any identifiable cause or stressor prior to the onset of symptoms. Patients underwent further workup with no pathologic cause identified for their symptoms. The symptoms of both patients continued to improve since initial presentation.

Discussion: Given that no etiology of either patient's symptoms had been identified after advanced work up, it was felt that both of these patients suffered from a case of PTS. We present this case report to address the paucity of literature regarding idiopathic onset of PTS.

Presentation and Technical Application of External Fixator Kickstand with De-rotational Bar Modification

Presenting Author: Speros Gabriel, DO

Co-Authors: Grace Thiel, DO – KCU GME Consortium/HCA Midwest Center Orthopedic Surgery, Mandy Weaver – KCU College of Osteopathic Medicine, Cameron Sprong, DO - Research Medical Center Orthopedic Surgery, Molly Black, MD - Orthopedic Surgeons Inc.

External fixator application is an essential treatment modality for the management of lower extremity trauma. Ankle and tibial plafond (pilon) fractures are common orthopedic injuries with management often consisting of temporary ankle joint spanning external fixator application prior to definitive fixation. Multiple factors including fracture severity, swelling, skin tension, fracture blisters, open wounds, and vascular status all go into the decision to place a temporary external fixator, with pilon fractures receiving this modality for a large proportion of reported injuries. Complications of external fixators do occur with heel ulcerations reported. The application of an external fixator "kickstand" has been described to help avoid this complication. We present a discussion of the literature surrounding this topic as well as a demonstration of the modification of this technique with the addition of a de-rotational bar for increased external fixator kickstand stability.

Opioid Prescribing Patterns Following Isolated Trigger Finger Release: A Single-Institution Quality Improvement Study

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Overprescribing of opioids continues to remain a public health crisis and it is important for physicians to scrutinize their prescription practices. Tailoring practice management based off each surgical procedure should be routine and universalized by analyzing current treatment regimens. Trigger finger release surgery is one of the most performed outpatient surgeries in the United States and optimal prescribing practices have been hard to standardize. This study aimed to standardize and recommend a set number of morphine milligram equivalents (MME)

for isolated trigger finger release surgery and to determine whether there is a need for refills within the first 90 days status post surgery. This quality control retrospective study was conducted at a single institution from July 1, 2024 - July 1, 2025. 85 patients were included in this analysis with 65 receiving an opioid prescription after surgery. Upon data review, attendings prescribed higher MME than residents and physician assistants. There was also an inverse relationship observed between initial prescription quality and refill requirement signifying the need to find a standardized prescribing mechanism. Based off this study we propose that 15-20 tablets of hydrocodone or 75-100 MMEs for an isolated trigger finger release will lead to adequate pain control, less refill request, and responsible opioid stewardship.

Ozark Center Psychiatry

KCU Research Symposium 2026

Title	Presenting Author	Category
Psychiatric Presentations Associated With Kratom Use: A Review of Reported Psychosis Cases	Dr. Mahad Baig	Research

Psychiatric Presentations Associated With Kratom Use: A Review of Reported Psychosis Cases

Presenting Author: Mahad Baig, MD

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Introduction: Kratom (Mitragyna speciosa) contains psychoactive alkaloids, primarily mitragynine and 7-hydroxymitragynine. Between 2011 and 201, plant-based psychoactive substance misuse in the US declined, while kratom misuse increased by nearly 5,000%. Repeated exposure to kratom has been shown to upregulate dopamine transporter (DAT) expression, potentially enhancing dopaminergic signaling and increasing vulnerability to psychosis in susceptible individuals. Clinically, kratom has been associated with agitation, tachycardia, drowsiness, and confusion. This study aimed to review published case reports and documented psychosis in the setting of kratom use.

Methods: A literature search was conducted in Google Scholar and PubMed in October 2025 using Boolean operators combining terms related to kratom, psychosis, and psychiatric symptoms. Abstracts were independently screened by two investigators. Inclusion criteria were English-language human case reports or case series published between 2016 and 2025 describing psychotic features in the context of kratom use.

Results: Initial search yielded 1,501 abstracts. After exclusion of articles published before 2016 (n = 395), those without mention of both kratom and psychosis (n = 1,093), and irrelevant studies (n = 14), eight articles remained for full-text review, describing 11 cases of kratom-associated psychosis. Commonly reported features included paranoia (75%), aggression or agitation (63%), and manic psychotic symptoms (63%). However, many cases were confounded by co-occurring primary psychiatric disorders, including bipolar disorder or schizophrenia spectrum disorders (33.3%), and post-traumatic stress disorder (11.1%).

Discussion: The literature documents sporadic cases of psychosis temporally associated with kratom use, but a definitive causal relationship remains unclear due to frequent psychiatric comorbidity. Kratom may exacerbate psychosis in vulnerable individuals through dopaminergic mechanisms involving DAT upregulation. Detection of kratom metabolites is not routinely available on standard drug screening panels, which may contribute to under-recognition and misdiagnosis.

Conclusion: Increased clinician awareness of kratom use is essential, given its association with significant adverse psychiatric effects, including psychosis.

Reid Family Medicine

KCU Research Symposium 2026

Title	Presenting Author	Category
Sequential Coronary and Vertebral Artery Dissections in a Young Female: The Critical Role of Timely Computed Tomography Angiography	Dr. Amal Sobeih	Case Report
No Pain, No Gain...No Flow: Effort Induced Axillo-subclavian Vein Thrombosis	Dr. Rohit Shrestha	Case Report
When Allopurinol Suppresses More Than Uric Acid: A Case of Drug-Induced Myelosuppression and Ecthyma Gangrenosum	Dr. Vivek Roy	Case Report
Heartburn From the Heart: Pericardial Effusion Masquerading as Gastroesophageal Reflux Disease	Dr. Sasha Johnson	Case Report
The Impact of Increased CGM on A1c in a Residency Clinic	Dr. Jesse Smallwood	Quality Improvement
Not All That SIRS Is Sepsis: A Thyroid Storm in Disguise	Dr. Natalia Rosca	Case Report
From Injection to Infection: A Case of Intravenous Drug Use-Associated Tricuspid Valve Endocarditis with Multisystem Septic Complications	Dr. Victor Odoma	Case Report
Treatment backfires, a toxic twist: allopurinol-induced neutropenia and ecthyma gangrenosum.	Dr. Chibuzor Madu	Case Report
A Gut Feeling Gone Wrong	Dr. Muhammad Ali Siddiqui	Case Report
Gastric band gone rogue: intragastric migration 19 years after laparoscopic adjustable gastric banding (LAGB).	Dr. Chibuzor Madu	Case Report
Tacrolimus toxicity presenting as transient ischemic attacks	Dr. Lorraine Lorenz	Case Report
NORTHERA (Droxidopa) for temperature instability associated with autonomic dysfunction	Dr. Lorraine Lorenz	Case Report
Amiodarone Pulmonary Toxicity Complicating Bilateral Infectious Pneumonia in Vulnerable Patient	Dr. Samuel Griffin	Case Report
Resident Burnout: Change in Clinic Schedule and its Impact	Dr. Christine Miller	Quality Improvement
Veiled in Darkness: The Pneumonia Mystery	Dr. Sadia Khan	Case Report
Spontaneous Tumor Lysis Syndrome in Metastatic Small Cell Carcinoma of the Cervix	Dr. Tehreem Akhtar	Case Report
Hypertriglyceridemia-Induced Acute Pancreatitis With Euglycemic DKA	Dr. Vikram Gill	Case Report

Sequential Coronary and Vertebral Artery Dissections in a Young Female: The Critical Role of Timely Computed Tomography Angiography

Presenting Author: Amal Sobeih, MD

Co-Authors: Novera Inam, MD – KCU GME Consortium/Reid Health Family Medicine, Donald Smith, MD – KCU GME Consortium/Reid Health Family Medicine

Introduction: Spontaneous arterial dissections are rare but serious in young women without traditional risk factors. SCAD can cause acute coronary syndrome, while vertebral artery dissection may cause stroke. Sequential dissections are uncommon and poorly understood.

Case Report: A 36-year-old female with a history of supraventricular tachycardia post-ablation presented with right shoulder pain during exercise and near-syncope causing facial trauma. She reported nausea and lightheadedness but no chest pain, dyspnea, or seizures. Family history was notable for Takotsubo cardiomyopathy. Initial evaluation revealed stable vital signs, normal ECG and chest X-ray, and elevated troponin (123 ng/L). CT head was normal. She received IV fluids, antiemetics, and heparin. Cardiac catheterization revealed a left anterior descending artery dissection consistent with SCAD. She remained chest pain-free and was discharged with outpatient follow-up. Two weeks later, she returned with dizziness and posterior head pain. CTA of the head and neck revealed a left vertebral artery dissection with aneurysm at C5. Neurologic exam and brain MRI were normal. Dual antiplatelet therapy was recommended with close outpatient follow-up.

Conclusion: This case highlights the rare occurrence of sequential coronary and vertebral artery dissections and emphasizes the importance of timely CTA, high clinical suspicion, and multidisciplinary management to prevent catastrophic outcomes.

No Pain, No Gain...No Flow: Effort Induced Axillo-subclavian Vein Thrombosis

Presenting Author: Rohit Shrestha, MD

Co-Authors: Novera Inam, MD – KCU GME Consortium/Reid Health Family Medicine, Donald Smith, MD – KCU GME Consortium/Reid Health Family Medicine

Introduction: Effort-induced upper extremity deep vein thrombosis (UEDVT) is a rare condition seen mostly in young, active individuals. It usually occurs from compression of the axillo-subclavian vein and can lead to serious complications such as pulmonary embolism. Early recognition is important for appropriate management.

Case Description: A 35 year old male with no significant medical history presented with progressive right arm swelling and pain after a day of cutting and moving trees. Overnight, symptoms worsened and were accompanied by numbness and decreased grip strength. Examination showed diffuse swelling from the wrist to the axilla, venous congestion, and limited shoulder mobility. Venous Doppler confirmed acute thrombosis of the right subclavian

and axillary veins, and CT angiography revealed small pulmonary emboli. A diagnostic venogram demonstrated chronic appearing occlusion of the axillosubclavian venous system with collateral formation and evidence of subclavian artery compression, raising concern for thoracic outlet syndrome. Hypercoagulability testing was negative. The patient underwent right thoracic outlet decompression with partial first rib resection, venolysis, intraoperative venography, and balloon angioplasty. He improved postoperatively and was discharged on apixaban, with plans to transition to low dose aspirin. Follow up showed continued improvement with gradual resolution of swelling.

Discussion/Conclusion: Effort induced UEDVT results from axillosubclavian vein compression during strenuous activity and may lead to pulmonary embolism. Diagnosis requires ultrasound and additional imaging to identify anatomic obstruction. Management includes anticoagulation and surgical decompression when compression is present. Early recognition of unilateral arm swelling is essential to prevent complications and improve outcomes.

When Allopurinol Suppresses More Than Uric Acid: A Case of Drug-Induced Myelosuppression and Ecthyma Gangrenosum

Presenting Author: Vivek Roy, MD

Co-Authors: Novera Inam, MD – KCU GME Consortium/Reid Health Family Medicine, Donald Smith, MD – KCU GME Consortium/Reid Health Family Medicine

Introduction: Allopurinol-induced myelosuppression is a rare but potentially life-threatening adverse effect that may occur weeks to years after initiation.

Case Presentation: 65-year-old female with a medical history of stage 3 CKD presented with a 3-week history of progressive fatigue and fever. Labs revealed WBC of 1.3 and an ANC of 0, showing a decline from a WBC of 6.7 documented after she had been started on allopurinol for asymptomatic hyperuricemia. On hospital day 2, patient developed a central black eschar with surrounding erythema under the left breast. Wound culture grew Pseudomonas, confirming the diagnosis of ecthyma gangrenosum. On hospital day 3, CBC revealed elevated promyelocyte and blast levels, prompting a hematology consult. Flow cytometry and BM Biopsy were performed with unclear significance. WBC and skin lesion progressively improved by discharge.

Discussion: Allopurinol-induced myelosuppression is a recognized adverse effect manifested by anemia, leukopenia, or thrombocytopenia, with onset occurring as early as 6 weeks to as late as 6 years after initiating therapy, severe cases have been documented, including a case in a patient with chronic kidney disease where bone marrow cellularity was severely reduced (<20%) and recovered to approximately 70% after 6 months following allopurinol discontinuation and supportive care. Our case illustrates the importance of this allopurinol specific phenomenon. The development of ecthyma gangrenosum further underscores the severity of drug-induced immunosuppression. The presence of elevated promyelocytes and

blasts necessitated exclusion of hematologic malignancy, and the temporal relationship and recovery support a drug-induced etiology.

Conclusion: Allopurinol-induced myelosuppression is a serious complication that requires high clinical suspicion. Prompt recognition, and discontinuation of the offending agent, are essential for favorable outcomes. Clinicians should carefully evaluate the indications for allopurinol and consider alternative agents in high-risk populations.

Heartburn From the Heart: Pericardial Effusion Masquerading as Gastroesophageal Reflux Disease

Presenting Author: Sasha Johnson, MD

Co-Authors: Novera Inam, MD – KCU GME Consortium/Reid Health Family Medicine, Donald Smith, MD – KCU GME Consortium/Reid Health Family Medicine

Introduction: Pericardial effusion is an important cardiac condition, with many causes. This can make it a challenging work up and creates concern for missing the diagnosis due to atypical clinical presentation.

Case Description: 26-year-old male presented to the ED with a 4-day history of fever and chills, shortness of breath, chest pain, and epigastric pain. These symptoms started two years ago and typically last 1 -2 weeks. He believed his symptoms were related to GERD and were unresponsive to omeprazole and Tylenol. He denied traveling, experiencing trauma, or having any sick contacts. Troponins were in normal range, and EKG had a normal sinus rhythm. CT abdomen and pelvis revealed a moderate pleural effusion. CT angiography chest showed moderate pleural effusion, 1.4 cm left upper nodule and left hilar adenopathy. The patient was diagnosed with pleural effusion with impending cardiac tamponade. An urgent consultation was placed with cardiology to provide definitive management.

Discussion: Pericardial effusion is defined as the accumulation of excessive fluid in the pericardial sac around the heart. A normal pericardial sac contains 15 - 50 ml of serous fluid. Hemodynamically stable patients with significant pericardial effusion may present symptoms with symptoms unrelated to the underlying cause. Pericardial effusion should be considered in a patient presenting with recurrent GERD like symptoms. This patient's presentation was unusual due to GERD symptomology and no known risk factors. A timely diagnosis and treatment of the effusion can be a life-saving event for some of the most acute patient case scenarios. This case report is to enhance awareness about a clinical presentation of pericardial effusion may completely no specific.

The Impact of Increased CGM on A1c in a Residency Clinic

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Introduction: We previously demonstrated that educational interventions provided to residents increased continuous glucose monitoring (CGM) prescriptions. Our interventions spanning two residency academic years noted a 3.7% increase in CGM prescriptions. Prior studies have shown that a CGM alone may reduce the average A1c by 0.5-1.0%1,2. We retrospectively analyzed the impact of increased CGM prescribing on glycemic control in adults with type 2 diabetes mellitus (T2DM) and those with T2DM compared with patients using traditional glucose monitoring in terms of A1c trend.

Methods: A total of 140 A1c encounters were included in the primary analysis. Of these 112 prescribed a CGM and 28 had a traditional glucometer. Mean A1c data were reviewed between June 1st 2024 and June 1st 2025 ecompanssing both intervention and post-intervention phases. We hypothesized that our patients who were prescribed and able to utilize a CGM would demonstrate HbA1c reductions comparable to those reported in prior literature, and at significantly lower levels than traditional glucometers.

Results: Among patients using CGM, mean HbA1c decreased from 9.22% to 8.53% over the study period, representing a reduction of 0.69%. In contrast, the control group using traditional glucose monitoring showed minimal change in mean HbA1c (7.90% to 7.92%). Using a non-parametric Manning-Whitney analysis with 2-tailed t test we found no statistically significant difference between the two groups ($U = 0.00$, $p = .121$).

Conclusion: The observed reduction in HbA1c among CGM users is consistent with previously published data, supporting the clinical benefit of CGM use in patients with T2DM. While not statistically significant, a reduction of 0.69% would be clinically significant. Study limitations include a significant decline in residency clinic census beginning in March 2025 and baseline differences in glycemic control between groups, with CGM patients exhibiting poorer glycemic control at baseline compared with patients using traditional monitoring.

Not All That SIRS Is Sepsis: A Thyroid Storm in Disguise

Presenting Author: Natalia Rosca, MD

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Thyroid storm is a rare, life-threatening condition characterized by severe manifestations of thyrotoxicosis. In national surveys from the United States, the incidence of thyroid storm is approximately 0.9 per 1,000 hospitalized patients per year. Its clinical presentation frequently overlaps with sepsis, making misdiagnosis common. A 43-year-old non-verbal male with a history of anoxic brain injury, and end-stage renal disease on hemodialysis was transferred from a dialysis center due to acute altered mental status. On presentation, he met systemic inflammatory response syndrome criteria. Initial evaluation revealed pneumonia, urinary tract infection, and a positive MRSA screen. Broad-spectrum antibiotics were initiated for sepsis. Despite seven days of antimicrobial therapy, the patient continued to exhibit persistent SIRS, particularly tachycardia, without radiologic evidence of ongoing infection. Blood cultures remained negative. Thyroid studies revealed suppressed TSH (<0.01 µIU/mL), elevated free T4 (4.6 ng/dL), free T3 (7.3 pg/mL), and total T3 (275 ng/dL). Given the thyroid function tests and clinical scenario, the patient met criteria for thyroid storm. Thyroid antibody testing was within normal limits, and imaging demonstrated a small thyroid gland without nodules. Appropriate treatment was initiated, resulting in steady biochemical improvement and clinical stabilization. Thyroid storms are often precipitated by stressors such as infection or surgery and can present with fever, tachycardia, and altered mental status, features indistinguishable from sepsis. In this case, persistent SIRS despite adequate antimicrobial therapy prompted further evaluation, leading to the correct diagnosis. The patient's ESRD and neurologic impairment further complicated recognition, as baseline tachycardia and altered mentation are common in these populations. Normal thyroid antibodies and a small gland suggest a non-autoimmune etiology, though the exact trigger remains unclear. Thyroid storm should remain a diagnostic consideration in patients with persistent sepsis-like physiology despite appropriate treatment. Early recognition and intervention are essential, particularly in non-verbal and medically complex patients.

From Injection to Infection: A Case of Intravenous Drug Use-Associated Tricuspid Valve Endocarditis with Multisystem Septic Complications

Presenting Author: Victor Odoma, MD

Co-Author: Novera Inam, MD – KCU GME Consortium/Reid Health Family Medicine

Introduction: Intravenous drug use (IVDU) is a major risk factor for right-sided infective endocarditis, complicated by bacteremia, septic pulmonary emboli, renal failure, and systemic fungal infections. The aim of this case report is to emphasize the complex multisystem

complications of intravenous drug use-associated endocarditis, discuss the diagnostic and management difficulties, and stress the significance of prompt identification.

Case Description: A 41-year-old man with a history of IV drug use; heroin, fentanyl, and methamphetamine, hepatitis B and C, and previous infective endocarditis came to the emergency room with fever, tachycardia, nausea, vomiting, chest pain, cough, and shortness of breath. The patient's vital signs showed a temperature of 102.7°F and a heart rate of 129bpm. Computed tomography angiography revealed septic pulmonary emboli. Blood cultures showed MRSA and Candida albicans. Transesophageal echocardiography showed vegetations on the atrial side of the tricuspid valve and severe tricuspid regurgitation. His hospital stay was complicated by peripheral septic thrombosis and acute tubular necrosis that led to renal failure that required dialysis. He also developed fungal retinitis.

Discussion: Right-sided infective endocarditis is significantly linked to intravenous drug use, attributable to recurrent venous inoculation of pathogens. The tricuspid valve is especially weak, and vegetations often grow on the atrial side of the valve. This leads to Septic pulmonary emboli which is treated different from thrombotic pulmonary embolism; instead of anticoagulation, the focus is on long-term antimicrobial therapy. This case exemplifies the series of life-threatening, multisystem complications that may occur due to intravenous drug use-related tricuspid valve endocarditis. Early recognition of septic pulmonary emboli, fungal dissemination, and renal involvement is critical because the treatment of these conditions differs from the treatment of noninfectious conditions. Misdiagnosis postpones definitive treatment, exacerbating embolic and valvular complications.

Treatment backfires, a toxic twist: allopurinol-induced neutropenia and ecthyma gangrenosum

Presenting Author: Chibuzor Madu, MD

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Introduction: Allopurinol-induced neutropenia is a rare but potentially life-threatening hematological adverse drug reaction, particularly in individuals with chronic kidney disease (CKD). This case report highlights how this reaction can progress to a dangerous outcome; ecthyma gangrenosum (EG), a severe opportunistic infection.

Case Description: A 65-year-old woman with Stage III CKD and gout presented with three weeks of increasing fatigue and malaise, along with nausea and vomiting for one day. Her symptoms began approximately six weeks after starting allopurinol for gout. On examination, she was febrile and tachycardic. Laboratory results revealed leukopenia and agranulocytosis. During hospitalization, painful necrotic skin lesions developed on her left breast and pubic region, with wound cultures yielding growth of Pseudomonas aeruginosa, confirming EG. Allopurinol was immediately discontinued, and the patient received targeted antibiotics and

supportive therapy. Subsequently, her white cell counts improved, and the lesions resolved. She was discharged on day eight with outpatient follow-up.

Discussion: This case underscores the significant risk of allopurinol accumulation in patients with CKD, which likely precipitated the immune-mediated neutropenia. Allopurinol, a xanthine oxidase inhibitor widely used for hyperuricemia and gout, is generally safe but can rarely cause severe hematological adverse reactions like neutropenia and agranulocytosis. Its active metabolite, oxypurinol, is primarily excreted through the kidneys, making patients with CKD particularly susceptible to drug accumulation and toxicity. The development of EG in this patient further illustrates how profound drug-induced neutropenia predisposes to serious opportunistic infections. This case emphasizes the importance of close hematological monitoring and dose adjustment of allopurinol in CKD patients. Furthermore, it is worthy of note that new skin lesions in such individuals should prompt urgent evaluation and initiation of broad anti-pseudomonal therapy.

A Gut Feeling Gone Wrong

Presenting Author: Muhammad Ali Siddiqui, MD

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Introduction: Abdominal pain is one of most common complaints reported by patients in both inpatient and outpatient settings. While there are scenarios in which it is quite simple to identify an acute abdominal emergency, at times these signs can be hiding in the shadows.

Case description: A 66 year old female with a past medical history of breast cancer, recently diagnosed lung adenocarcinoma, and recent hospitalization for a pulmonary embolism presented to the ED for abdominal pain. She was sent home on an antibiotic course for suspected enteritis. Her pain did briefly subside. She then presented one week later with acute limb ischemia. She underwent a mechanical thrombectomy and below-knee amputation with vascular surgery who cleared her for discharge. She developed abdominal soreness and continuous diarrhea. Workup was initiated including a GI pathogen panel which was unremarkable. She was treated symptomatically and discharged to the hospital's rehabilitation unit. She continued to report abdominal soreness, although her diarrhea had subsided. Given her consecutive thromboembolic episodes, a CT Angiogram of her abdomen was ordered, which demonstrated a thrombus lodged in the SMA. Fortunately, she did have collateral circulation distal to the clot which had prevented her from developing florid mesenteric ischemia and bowel necrosis. She underwent exploratory laparotomy with thromboembolectomy.

Discussion: This case highlights the need to consider all causes of a patient's complaints. This patient's soreness was mild in nature, and some of it could have been attributed to her

previous surgery. As such, mesenteric ischemia, while considered a possibility, was not at the very top of the differential diagnosis list.

Conclusion: While not every diarrheal illness requires a million dollar workup, it is important to have a broad differential and consider the patient's overall clinical picture when making decisions.

Gastric band gone rogue: intragastric migration 19 years after laparoscopic adjustable gastric banding (LAGB).

Presenting Author: Chibuzor Madu, MD

Co-Authors: Novera Inam, MD – KCU GME Consortium/Reid Health Family Medicine, Donald Smith, MD – KCU GME Consortium/Reid Health Family Medicine

Introduction: Laparoscopic adjustable gastric banding (LAGB) gained significant popularity in the early 2000s as a bariatric intervention for morbid obesity. The procedure involves placement of a silicone band around the proximal stomach to restrict intake and promote weight loss. Over time, it's popularity waned due to mounting evidence of late complications, including intragastric erosion, band slippage and band migration. One such complication, band migration, often presents with non-specific gastrointestinal symptoms.

Case Description: A 61-year-old male with a history of morbid obesity and chronic gastroesophageal reflux disease (GERD) presented with recurrent nausea and vomiting for three weeks. He had undergone LAGB 19 years earlier, with limited weight reduction and persistent GERD symptoms. He had multiple ER visits for vague epigastric abdominal pain however, CT scan of the abdomen revealed nonspecific postoperative changes without definitive evidence of band migration. Subsequent esophagogastroduodenoscopy (EGD) demonstrated a normal esophagus, a superficial gastric ulcer at the pylorus, and complete intragastric migration of the band. The patient was referred to bariatric surgery for band removal.

Discussion: This case illustrates a rare instance of very late intragastric migration of an LAGB, nearly two decades postoperatively, emphasizing the importance of physician vigilance. [5,6] Such delayed presentation reflects chronic erosive processes rather than acute mechanical displacement and is likely attributed to long-term pressure necrosis at the band-gastric wall interface. [7-10] Contributing factors may include excessive band inflation, suboptimal surgical technique, local infection, and impaired healing. Imaging modalities such as CT may fail to identify migration, underscoring the diagnostic superiority of EGD. Clinicians should maintain a high index of suspicion for late LAGB complications in patients presenting with chronic upper gastrointestinal symptoms. EGD remains essential for diagnosis and definitive management of LAGB migration.

Tacrolimus toxicity presenting as transient ischemic attacks

Presenting Author: Lorraine Lorenz, DO

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Introduction: Tacrolimus is an immunosuppressant that works as a calcineurin inhibitor that has been used for decades in lung, heart, and kidney transplants. However, it can have toxic effects on various organ systems as well. Case reports range from increased risk of diabetes to delayed-onset psychosis and acute kidney injury. It is well documented to cause neurotoxicity as well with one review summarizing 28 case reports in varying severity.

Case Description: A 71-year-old male presented to the ED for stroke-like symptoms, mainly left arm numbness. One week previously, he experienced a similar episode of diminished sensation in the left extremities and confusion. Past medical history included Goodpasture syndrome post-kidney transplant (2008), coronary artery disease, congestive heart failure, and prior multifocal embolic stroke (2021). Home medications were tacrolimus, mycophenolate, clopidogrel, apixaban, carvedilol, amlodipine, atorvastatin, isosorbide mononitrate, and hydralazine. Physical exam initially found decreased sensation on the left arm which resolved within the first few hours. CBC was unremarkable; BUN and Cr elevated at 29 mg/dL and 2.2 mg/dL, respectively. Imaging was negative for stroke. Testing for tacrolimus trough level came back at 12.1 ng/mL which is above the recommended level of 4-7 ng/mL at 17 years post-transplant, likely causing neurotoxicity and nephrotoxicity. Consultation with the transplant nephrologist recommended stopping tacrolimus and starting rapamycin. With discontinuation of tacrolimus and hydration, BUN and Cr returned to baseline.

Discussion: Tacrolimus has improved transplant prognosis but is associated with early and late toxicity that can impact the kidneys, brain, pancreas and heart; the pathophysiology of which remains under investigation. It is important to recognize tacrolimus toxicity in patients to prevent further complications and damage to organ systems. The patient was successfully discharged with close nephrology follow-up and has continued to do well after discontinuation of tacrolimus with no further stroke-like symptoms.

NORTHERA (Droxidopa) for temperature instability associated with autonomic dysfunction

Presenting Author: Lorraine Lorenz, DO

Co-Authors: Novera Inam, MD – KCU GME Consortium/Reid Health Family Medicine, Donald Smith, MD – KCU GME Consortium/Reid Health Family Medicine

Introduction: Northera is a norepinephrine prodrug that is approved for orthostatic hypotension and light headedness in association with autonomic dysfunction related to Parkinson's or multiple system atrophy.

Case Description: A 76-year-old female presented with low body temperature, low blood pressure and bradycardia initially concerning for myxedema coma. Past medical history included hypothyroidism, hyperlipidemia, vitamin D deficiency, Parkinson's disease, osteopenia, insomnia, and previous breast cancer. Home medications included levothyroxine, carbidopa-levodopa, donepezil, trazodone, aspirin, letrozole, denosumab, and pimavanserin. She was brought into the emergency department by her husband for a fall and was found to have a temperature of 32.9 C, heart rate of 48 bpm, and confusion. Labs were significant for WBC 2.3x103/mcL, morning cortisol of 17.7 mcg/dL, and TSH of 2.55 mIU/mL. Head CT was significant for scalp hematoma and generalized atrophy. Physical exam revealed an ill-appearing female with lesions and bruises on her face post-fall, somnolent, and disoriented. Her EKG had slight QTc prolongation, so donepezil was stopped. Initially, the patient received fluid boluses and several doses of intravenous hydrocortisone which helped maintain her blood pressure. Per cardiology, patient did not meet criteria for a pacemaker, so a trial of northera was recommended. After 24 hours on northera, the patient was able to appropriately maintain blood pressure and body temperature and discharged home with close follow up scheduled with her neurologist.

Discussion: In conclusion, northera is useful in cases of autonomic dysfunction, can help with the maintenance of blood pressure, and appears to help with the maintaining of adequate core temperature in the setting of autonomic failure. Further research is needed to better understand the impact of northera on body temperature maintenance.

Amiodarone Pulmonary Toxicity Complicating Bilateral Infectious Pneumonia in Vulnerable Patient

Presenting Author: Samuel Griffin, MD

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Introduction: For many patients, amiodarone is required for treatment of arrhythmia, with the most common condition being atrial fibrillation. While it does achieve good rhythm control, amiodarone has significant potential side effects across multiple systems, including the liver, lungs, thyroid, and eyes. Annual physicals are vital along with regular screening of thyroid and hepatic enzymes. For the lungs, regular imaging every 3 to 6 months is recommended to screen for signs of high-risk pulmonary toxicity.

Case Description: Patient was an 89-year-old male with history of coronary artery disease post-percutaneous intervention and atrial fibrillation, for which he was post-ablation and on amiodarone maintenance. The patient was hospitalized for acute hypoxic respiratory failure with multifocal pneumonia. He was treated with IV antibiotics, diuresis, and supportive care, and his home medications were continued. Despite appropriate pneumonia management, his respiratory status continued to worsen. Upon consultation, Cardiology was consulted and noted great concern for pulmonary toxicity given the patient's. Amiodarone was stopped and the patient was transferred to the intensive care unit. Despite aggressive, multidisciplinary

care, the patient's respiratory failure continued to worsen with steadily worsening supplemental oxygen requirements despite antiinflammatory treatment and tailored antibiotic coverage. As patient condition continued to decline, hospice was consulted and patient and family agreed with transition to hospice care, with the patient passing away within one day of comfort measures.

Discussion: If the respiratory toxicity of amiodarone was discovered prior to this patient's infection, then earlier treatment and cessation of the medication could have been performed which could have prevented the cascade that led to the passing of this patient. As providers we should place more priority on following guidelines for monitoring for potentially dangerous medications such as amiodarone.

Resident Burnout: Change in Clinic Schedule and its Impact

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Physician burnout is a well-known phenomenon, with rates reported as high as 69% amongst resident physicians. Burnout is assessed using validated tools such as the Maslach Burnout Inventory (MBI), which evaluates emotional exhaustion, depersonalization, and reduced personal accomplishment. One key contributor is "time pressure", defined as needing more time than allotted to provide quality care. This project aims to assess whether reducing time pressure in a family medicine clinic leads to improvement in burnout.

Our existing clinic template consisted of 20-minute follow-up visits and 40-minute new patient visits. To address perceived time constraints, a revised clinic template was implemented, increasing follow-up visits to 30 minutes and new patient visits to 60 minutes. This intervention was designed to better align visit length with patient care demands and reduce clinic-related workplace stressors. Resident well-being was assessed using pre- and post-intervention surveys evaluating perceived time pressure, stress, and burnout.

A condensed version of the MBI was administered to a total of twelve PGY-2/PGY-3 residents (six female and six male). 16% of residents reported high levels of emotional exhaustion and depersonalization. This percentage decreased to 11% six months following implementation of the revised clinic schedule. There also was approximately 10% improvement in Personal Accomplishment responses at 6 months. Time pressure affects 67% of clinicians during new patient visits and 53% during follow-up encounters.

Limitations of this study include small sample size and differing response rates. Future studies with larger, more diverse samples, and improved response rates may better validate the relationship between time pressure and physician burnout.

Improving clinic scheduling as a means of decreasing time pressure for physicians was correlated with a decrease in reported emotional exhaustion/depersonalization, and improved personal accomplishment. This study is important as it demonstrates how extending clinic visit times may help alleviate time pressure and, in turn, reduce burnout.

Veiled in Darkness: The Pneumonia Mystery

Presenting Author: Sadia Khan, MD

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Introduction: Granulomatosis with polyangiitis is an uncommon but serious form of vasculitis that involves small and medium blood vessels and can be fatal if untreated. Because its symptoms frequently resemble those of infectious or malignant conditions, diagnosis can be difficult. Prompt identification is important to reduce the risk of permanent organ injury and to improve patient outcomes.

Case Description: A 71-year-old man with a history of restless leg syndrome, gastroesophageal reflux disease, hyperlipidemia, and prediabetes, presented with a two-week history of fever, productive cough, chronic sinusitis, and intermittent hemoptysis. Chest imaging revealed right lung consolidation with nodular infiltrates suggestive of pneumonia. Despite broad-spectrum antibiotics including ceftriaxone, azithromycin, and later piperacillin-tazobactam, symptoms persisted. The patient developed nocturnal fevers, malaise, new-onset atrial fibrillation, and acute kidney injury stage 1, while blood cultures remained negative. Given the persistence of systemic symptoms, immunologic evaluation was performed, revealing markedly elevated c-ANCA titers (1:320) and ANA (1:640, speckled), raising suspicion for GPA. High-dose intravenous methylprednisolone was initiated, followed by an oral prednisone taper and rituximab induction therapy. Serial imaging demonstrated substantial resolution of pulmonary infiltrates, and systemic symptoms improved significantly.

Discussion: This case highlights the deceptive presentation of GPA, which can masquerade as refractory pneumonia. Persistent fever, hemoptysis, leukocytosis, and poor response to antibiotics should prompt consideration of systemic vasculitis. GPA may involve multiple organs, including pulmonary, renal, cutaneous, and neurologic systems, necessitating multidisciplinary management. Immunosuppressive induction with glucocorticoids and rituximab is effective, particularly in elderly patients or those with organ-threatening diseases. GPA is a "silent storm" that can hide behind common infections. Clinicians should remain vigilant in patients with unresolved pneumonia and systemic inflammation. Prompt

immunologic evaluation, timely immunosuppressive therapy, and careful monitoring can unmask this elusive disease, prevent irreversible organ damage, and improve patient outcomes.

Spontaneous Tumor Lysis Syndrome in Metastatic Small Cell Carcinoma of the Cervix

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Introduction: Tumor lysis syndrome (TLS) is a life-threatening oncologic emergency most associated with hematologic malignancies following cytotoxic therapy. Spontaneous TLS in solid tumors is rare, particularly in the setting of small cell carcinoma of the cervix.

Case Description: A 55-year-old female with a recently diagnosed uterine mass presented with acute left lower extremity pain and inability to ambulate. On admission, she was tachypneic with leukocytosis (WBC $18.5\times10^3/\mu L$), anemia (hemoglobin 8.7 g/dL), and preserved renal function (creatinine 0.7 mg/dL). Imaging revealed marked enlargement of the uterus and cervix with extensive retroperitoneal and pelvic lymphadenopathy and bilateral adrenal lesions consistent with metastatic disease. Venus Doppler demonstrated acute left common femoral vein thrombosis. Her hospital course was complicated by acute aortic occlusion with limb ischemia requiring emergent thrombectomy and postoperative mechanical ventilation. Cervical biopsy confirmed extensive-stage metastatic small cell neuroendocrine carcinoma, and palliative management was recommended. Within 48 hours prior to chemotherapy initiation, she developed severe metabolic abnormalities consistent with clinical TLS, including hyperkalemia 7.7 mmol/L, hyperphosphatemia 9.7 mg/dL, hyperuricemia 8.9 mg/dL, hypocalcemia 7.9mg/dL, metabolic acidosis, elevated creatine phosphokinase 3,219 U/L, AKI creatinine 2.1mg/dL. Despite aggressive medical management, her condition deteriorated. Family declined dialysis and proceeded with comfort care; she died shortly after discharge to inpatient hospice.

Discussion: Spontaneous TLS and solid tumors are rare but have been reported in high-grade malignancies with large tumor burden and rapid cellular turnover. This case met Cairo-Bishop criteria for clinical trials and occurred prior to chemotherapy initiation, highlighting the importance of early recognition. Failure to identify TLS promptly may lead to irreversible organ dysfunction and death. This case highlights spontaneous tumor lysis syndrome as a rare but fatal complication of metastatic small cell carcinoma of the cervix and signifies the importance of early recognition of TLS and high-grade solid tumors even in the absence of cytotoxic therapy.

Hypertriglyceridemia-Induced Acute Pancreatitis With Euglycemic DKA

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Introduction: Hypertriglyceridemia is a recognized cause of acute pancreatitis and presents significant management challenges when triglyceride (TG) levels are markedly elevated or recurrent. Concomitant euglycemic diabetic ketoacidosis (DKA), particularly in patients receiving sodium-glucose cotransporter-2 (SGLT2) inhibitors, can further complicate diagnosis and treatment.

Case Description: A 32-year-old man with type 2 diabetes mellitus, hypertension, and a history of renal carcinoma presented on 7/11/2024 with sudden-onset, severe epigastric pain radiating to the right upper quadrant and associated nausea without vomiting. He denied fever, diarrhea, dysuria, or hematuria. Home medications included high-intensity statin therapy, fenofibrate, omega-3 fatty acids, niacin, basal-bolus insulin, and empagliflozin. Vital signs showed blood pressure 141/107 mmHg and heart rate 94 bpm. Laboratory studies revealed glucose 155 mg/dL, bicarbonate 13 mEq/L, WBC 10.6 $\times 10^9$/L, creatinine 0.6 mg/dL, and eGFR 132 mL/min/1.73 m^2, with urinalysis positive for ketones, protein, and glucose. Computed tomography of the abdomen demonstrated minimal edema near the pancreatic head consistent with mild acute pancreatitis and hepatic steatosis. Repeat lipid testing revealed severe hypertriglyceridemia with TG levels exceeding 3000 mg/dL, supporting hypertriglyceridemia-induced pancreatitis with concern for euglycemic DKA.

Management and Clinical Course: Treatment included bowel rest, intravenous fluids, antiemetics, opioid analgesia, and continuous intravenous insulin with dextrose-containing fluids and intensive electrolyte monitoring. Escalating potassium supplementation and higher dextrose rates were required to maintain euglycemia, necessitating ICU-level care. TG levels remained persistently elevated (>2000 mg/dL, approximately 2500 mg/dL on follow-up), and insulin therapy required adjustment due to hypoglycemia (nadir 65 mg/dL). Transfer was pursued for consideration of plasmapheresis.

Conclusion: This case underscores the complexity of managing hypertriglyceridemia-induced pancreatitis complicated by suspected SGLT2 inhibitor-associated euglycemic DKA and highlights the importance of careful insulin-dextrose titration, aggressive electrolyte management, and early consideration of plasmapheresis when triglyceride levels remain refractory.

St. Anthony Surgery

KCU Research Symposium 2026

Title	Presenting Author	Category
Review of radar localized excisions of non-breast lesions	Dr. Mollie Mustoe	Research
Pathologic Complete Response in HER2/neu-positive Breast Cancer Treated Without Chemotherapy	Dr. Michelle Won	Case Report
Extended "Fold-under" Tensor Fascia Lata Flap for Recalcitrant Trochanteric Pressure Ulcers: A Case Series	Dr. Xixi Cao	Research
Carotid Body Tumor Presentation, Management, and Outcome - an Institutional Perspective	Dr. Xixi Cao	Research
Iatrogenic colon injury during chest tube placement due to missed traumatic diaphragmatic hernia: A case report	Dr. Samantha Hutzley	Case Report

Review of radar localized excisions of non-breast lesions

Presenting Author: Mollie Mustoe, MD

Co-Authors: Elliott Yee, MD - University of Colorado, Martin D. McCarter, MD - University of Colorado, Camille L. Stewart, MD - St. Anthony Hospital

Introduction: Radar reflectors for soft tissue localization have historically been used for breast indications but can be placed elsewhere in the body up to 10 cm deep and may be left in situ indefinitely. We present novel non-breast usage of this technology that can assist in surgically locating otherwise difficult to identify lesions, minimizing morbidity.

Methods: We conducted a retrospective chart review of 19 patients who underwent pre-operative radar reflector placement, with subsequent extirpation from 5/2021 - 7/2025 by two surgeons at different institutions.

Results: Radar reflectors were placed in the following locations: neck (n=2), axilla (n=6), subpectoral (n=1), upper extremity (n=1), retroperitoneal (n=1), groin (n=5), perirectal (n=2), and peritoneal (n=1). Reflectors were placed 2-90 days preoperatively by interventional radiology physicians and were identified intraoperatively in 15/19 cases (78.9%). 12 subjects (63.2%) underwent neoadjuvant systemic treatment prior to surgery. Representative images are presented in figure 1 with reflectors circled in green (A - subpectoral lesion, B - perirectal lesion, C1 - retroperitoneal lesion, C2 - left flank incision for extirpation of reflector in C1). Intraoperative ultrasound was used to assist in reflector identification in 5/19 cases (26.3%). 18/19 (94.7%) of patients underwent outpatient same-day surgery. Final pathologies included metastatic melanoma (n=9), fibrotic/necrotic lymph node (n=3), reactive lymph node (n=1), neuroendocrine tumor (n=1), metastatic colorectal adenocarcinoma (n=2), liposarcoma (n=1), local recurrence of squamous cell cancer (n=1), and extra-nodal Rosai-Dorfman disease (n=1).

Conclusions: In this cohort, radar reflectors were successfully used to access non-breast lesions in a variety of different pathologies and anatomic locations, often enabling localization after neoadjuvant treatment and permitting same day surgery in potentially difficult locations. This technology should be a part of the surgeon's armamentarium when treating soft tissue lesions.

Pathologic Complete Response in HER2/neu-positive Breast Cancer Treated Without Chemotherapy

Presenting Author: Michelle Won, DO

Co-Author: Gretchen Ahrendt, MD - St. Anthony Hospital Breast Surgical Oncology

Introduction: Neoadjuvant chemotherapy with HER2/neu targeted therapy is standard for HER2/neu positive breast cancer; however, treatment-related toxicity may limit its use in select patients, prompting interest in chemotherapy de-escalation strategies.

Case Description: An 82-year-old woman presented with a 3.4-cm right breast mass with associated calcifications, clinically staged as IIA (T2N0M0). Biopsy demonstrated grade 3 invasive ductal carcinoma with micropapillary features, ER-positive, PR-negative and HER2/neu-positive. Following multidisciplinary discussion, neoadjuvant letrozole and trastuzumab were selected to minimize treatment-related toxicity. After six months, imaging demonstrated partial radiographic response. The patient subsequently underwent breast-conserving surgery with sentinel lymph node biopsy. Final pathology revealed only 1 mm of residual high-grade ductal carcinoma in situ with no nodal involvement.

Discussion: This patient demonstrated a pathologic complete response (pCR) without chemotherapy. Due to multiple comorbidities, management of her HER2/neu positive breast cancer deviated from standard neoadjuvant chemotherapy. HER2/neu positive tumors achieve pCR rates of approximately 65-70% with standard chemotherapy plus trastuzumab and pertuzumab. Chemotherapy-free regimens remain less well studied and are associated with lower response rates in selected lower-risk populations. Ongoing investigation of de-escalation strategies raises the question of whether select patients may safely benefit from chemotherapy-free approaches.

Extended "Fold-under" Tensor Fascia Lata Flap for Recalcitrant Trochanteric Pressure Ulcers: A Case Series

Presenting Author: Xixi Cao, MD

Co-Author: Craig A Reynolds, MD - St. Anthony Hospital Department of Plastic Surgery

Trochanteric pressure ulcers are difficult to treat and often complicated by infection spreading to the hip joint. The most used flap for the treatment of trochanteric ulcers is the tensor fascia lata (TFL) musculocutaneous flap. The authors designed an extended "fold-under" TFL flap that was harvested from a site near the defect and involved transposition within 90 degrees and folded under to cover the ulcer with a large amount of soft tissue. Five patients with trochanteric pressure ulcers were reconstructed using this method without any surgical complications. There were no recurrences during follow-up (6 months).

The extended "fold-under" TFL flap has many advantages: (1) the flap is reliable and easily designed; (2) formation of dead space is prevented; (3) the de-epithelialization of the flap produces tight attachment of the flap to the recipient bed; (4) The "fold-under" TFL flap has sufficient soft tissue bulkiness and a reliable blood supply.

Carotid Body Tumor Presentation, Management, and Outcome - an Institutional Perspective

Presenting Author: Xixi Cao, MD

Co-Author: Marcus Kret, MD - St. Anthony Hospital General Surgery

Objective: This study aimed to analyze the presentation and treatment modalities of carotid body tumor (CBT) and evaluate the outcomes and complications associated with surgical interventions of CBT.

Methods: Seven patients with ten CBTs treated surgically between 2016 and 2024 were included in the study. The analysis focused on symptoms upon presentation, diagnostic modalities, surgical and radiological interventions, and associated complications.

Results: (1) A total of seven patients were studied, with an age ranging from 24 to 77 years (median age 55 years), in which female preponderance was found (male: female = 1: 2.5). (2) The most prevalent symptom is painless neck mass (n = 5, 71.4%), followed by facial tingling/numbness, confusion and walk abnormalities. (3) Bilateral lesions were identified in 42.9% of patients (n = 3), all of which had larger lesions on the left side, while 57.1% were unilateral cases, either on the right or left side. (4) Among the seven patients, three (42.9%) were classified as having Shamblin type I tumors, accounting for 5 tumors (50% of the total 10 tumors); Two patients (28.6%) had Shamblin type II tumors, comprising three tumors (30%); and the remaining 2 patients (28.6%) had Shamblin type III CBTs. (5) Preoperative angioembolization was performed in five (71.4%) patients with tumors exceeding 2.5 cm in size; and all (100%) patients underwent complete excision (Figure 2). (6) The most common postoperative complication was hematoma at the operative site. All patients are recurrence-free with the minimum of 2 month follow up (Table 1).

Conclusion: Careful preoperative evaluation, which included appropriate modality for diagnosis, preoperative angioembolization for large tumors, meticulous dissection, and attentive postoperative management, resulted in complete excision of all the tumors and with less complications postoperatively. Consequently, early detection and prompt surgical resection of CBTs are essential for reducing surgical complications.

Iatrogenic colon injury during chest tube placement due to missed traumatic diaphragmatic hernia: A case report

Presenting Author: Samantha Hutzley, DO

Co-Authors: Mollie Mustoe, MD – KCU GME Consortium/St. Anthony Hospital General Surgery, Robert Hoffman, MD - St. Anthony Hospital General Surgery

Introduction: Traumatic diaphragmatic injuries are uncommon and frequently missed during initial trauma evaluation. Abdominal viscera may herniate into the thoracic cavity, creating risk for complications during routine procedures such as chest tube placement. Iatrogenic bowel

injury in the setting of an unrecognized diaphragmatic hernia is a rare but potentially catastrophic complication.

Case: Patient is a 56 year old male who presented after a mountain biking accident with left rib 1-7 fractures, small hemopneumothorax, and a left clavicle fracture. On hospital day 3 patient developed a large pneumothorax, prompting chest tube placement. Foul smelling and grossly infectious appearing fluid was evacuated on placement. Computed tomography revealed herniation of the splenic flexure through the left hemidiaphragm. Patient underwent emergent exploratory laparotomy with diaphragm repair and resection of the injury segment of colon. The patient's hospital course was further complicated by development of an empyema requiring thoracotomy and decortication and fascial dehiscence requiring re exploration and mesh closure. The patient was ultimately discharged on hospital day 19 and has since recovered well.

Discussion: Missed traumatic diaphragmatic hernias remain a diagnostic challenge and may predispose patients to iatrogenic injury during routing interventions. Enteric or feculent output from a chest tube should prompt immediate evaluation for visceral perforation. A high index of suspicion for diaphragm injury should be maintained in thoracoabdominal trauma to avoid preventable complications.

St. Luke's Family Medicine

KCU Research Symposium 2026

Title	Presenting Author	Category
Outcomes in 35 Children with Hyperopia Implanted with Phakic Ophtec IOLs	Dr. James Liu	Research
The nonspecific ocular and otic manifestations of neurosyphilis	Dr. Kailyn Baalman	Case Report

Outcomes in 35 Children with Hyperopia Implanted with Phakic Ophtec IOLs

Presenting Author: James Liu, DO

Co-Authors: Nicholas Faron, DO - St. Louis Children's Hospital at Washington University Medical Center, James Hoekel, OD - St. Louis Children's Hospital at Washington University Medical Center, Lawrence Tychsen, MD - St. Louis Children's Hospital at Washington University Medical Center

Introduction: Reports of iris-enclaved phakic IOL implantation performed on children to correct hyperopia have been limited to small series or case reports. Here we analyze outcomes in a sizeable number of children and adolescents treated by implantation of an Ophtec phakic IOL (pIOL).

Methods: Clinical outcome data were collated prospectively in 39 hyperopic children (67 eyes) implanted with Ophtec pIOLs. 86% of the patients had a preexisting neuro-developmental disorder (NDD) and/or visuomotor co- morbidities. All children had difficulties with spectacle wear and unsuited to contact lens wear. Mean age at surgery was 10.9 yrs (range 2.6-18); mean follow-up was 3.3 yrs (range 1-9).

Results: Mean spherical refractive error improved from +6.7±1.9D preoperatively to -0.7 ±1.4D at 1-year follow-up and -1.1±1.5D at 3-years. Refractive spherical regression was -0.11D/yr after 3 years. UDVA improved from an average logMAR 1.3 (20/400) to 0.4 (20/50). CDVA improved an average of 0.01 logMAR. 23% of children treated had a gain in at least one level of binocular fusion. 12/39 children cooperated for ECD testing; 4/67 eyes (6%) had an annual ECD decline of > 2 %/yr. 3/67 eyes (4%) lost > 2 lines UDVA in follow-up, attributable to strabismic amblyopia. None of the children experienced pIOL dislocation.

Discussion: In children unable to use spectacles of contact lenses-including those with NDD-the iris-fixated Ophtec pIOL produced large, durable improvements in UDVA and hyperopic refractive error. The complication rate was low.

Conclusion: The Ophtec Hyperopic pIOL is an effective and reasonably safe method for improving visual function in highly ametropic children who have difficulties wearing contact lens or spectacles.

The nonspecific ocular and otic manifestations of neurosyphilis

Presenting Author: Kailyn Baalman, MD

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Introduction: Neurosyphilis is an uncommon but severe manifestation of Treponema pallidum infection that may occur at any stage of syphilis. Ocular and otic involvement can present with vague, nonspecific symptoms, frequently leading to delayed diagnosis and risk of irreversible sensory deficits. With rising syphilis incidence in the United States, clinicians must maintain

suspicion for neurosyphilis in patients presenting with unexplained visual or auditory complaints.

Case Description: A 47-year-old male with a history of hypothyroidism, hypertension, and alcohol use disorder presented with 6-8 weeks of progressive blurry vision, halos, photopsia, and dark visual spots worsened by head movement. He also reported left-sided tinnitus and decreased hearing. Initial emergency evaluation was inconclusive, and the patient left against medical advice. Subsequent ophthalmologic examination revealed findings consistent with bilateral retrobulbar optic neuritis without optic disc edema. Serologic testing demonstrated a positive rapid plasma reagin (RPR) titer of 1:128 with reactive T. pallidum antibodies. Lumbar puncture showed elevated opening pressure (27 cm H_2O), lymphocytic pleocytosis, and mildly increased protein; cerebrospinal fluid VDRL was nonreactive. MRI revealed no acute intracranial pathology. The patient was diagnosed with neurosyphilis with ocular and otic involvement and treated with intravenous penicillin G for 14 days followed by intramuscular penicillin G. Visual symptoms resolved completely, hearing improved, and follow-up RPR decreased fourfold to 1:32.

Discussion: This case highlights the diagnostic challenge of neurosyphilis presenting solely with ocular and otic symptoms in the absence of classic cutaneous or genital findings. Prompt recognition, serologic testing, and initiation of penicillin therapy are essential to prevent permanent complications. Neurosyphilis should remain in the differential diagnosis of unexplained optic neuritis or auditory symptoms, particularly amid increasing syphilis rates.

St. Mary General Surgery

KCU Research Symposium 2026

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Incidental High-Grade Goblet Cell Adenocarcinoma Identified During Laparoscopic Appendectomy

Presenting Author: Megan Crotts, DO

Co-Authors: Aren Balikian MS3 – KCU College of Osteopathic Medicine, Jake Meier MS2 – A.T. Still University College of Osteopathic Medicine, Adam Swiger DO - Advanced Surgical Associates

Introduction: Appendiceal malignancies account for less than 1% of gastrointestinal cancers. Goblet cell adenocarcinoma (GCA) represents approximately 15-20% of appendiceal tumors and is frequently discovered incidentally following appendectomy for presumed acute appendicitis. Although historically grouped with neuroendocrine tumors, GCA demonstrates more aggressive adenocarcinoma-like behavior, requiring distinct oncologic management.

Case Description: A 59-year-old male with a history of aortic valve repair and smokeless tobacco use presented with acute right lower quadrant abdominal pain and localized tenderness. Computed tomography of the abdomen and pelvis confirmed acute appendicitis without perforation or mass. The patient underwent an uncomplicated laparoscopic appendectomy. Final pathology revealed high-grade goblet cell adenocarcinoma arising in the setting of acute appendicitis with serositis. The tumor invaded the subserosa without lymphovascular or perineural invasion. Surgical margins were negative, with the closest margin measuring less than 1 mm. No gross metastatic disease was identified intraoperatively.

Discussion: GCA exhibits mixed glandular and neuroendocrine histologic features but behaves more aggressively than typical appendiceal neuroendocrine tumors. Five-year overall survival ranges from approximately 70-80% in early-stage disease, with significantly poorer outcomes in advanced stages. Other appendiceal malignancies include adenocarcinoma, mucinous neoplasms, and neuroendocrine tumors, each with differing prognoses and surgical considerations. Current literature supports completion right hemicolectomy for high-grade GCA to achieve adequate lymph node sampling and oncologic staging. Multidisciplinary evaluation is essential to guide surgical management, adjuvant therapy considerations, and long-term surveillance.

Crural Dissection During Hiatal Hernia Repair Complicated by a Vasular Anatomic Variant

Presenting Author: Jesse Rincon, DO

Co-Author: Myra McLenon- Kansas City University College of Osteopathic Medicine

Introduction: Crural dissection is a fundamental step in hiatal hernia repair, allowing for adequate mobilization of the esophagus and durable cruraplasty. This portion of the operation is typically performed in close proximity to vascular structures supplying the diaphragm and gastroesophageal junction. While the anatomy is usually predictable, anatomic variants of the

inferior phrenic arteries have been described and may significantly complicate hiatal dissection, increasing the risk of vascular injury and limiting operative exposure.

Case Description: A 52-year-old female was transferred to our institution with a large hiatal hernia and persistent symptoms of nausea and vomiting. Prior evaluation at an outside facility included esophagogastroduodenoscopy, which ruled out gastric volvulus. Despite this assessment, the patient continued to exhibit obstructive symptoms, prompting transfer for definitive surgical management. During operative repair, standard dissection of the diaphragmatic crura was initiated in preparation for cruraplasty. In the course of this dissection, an anatomic vascular variant was encountered in which the left gastric artery gave rise to an inferior phrenic branch. This vessel coursed along the diaphragmatic crura and directly obscured the operative field, significantly limiting visualization and complicating safe mobilization of the hiatus necessary for repair.

Discussion: The inferior phrenic arteries most commonly originate from the abdominal aorta or celiac trunk; however, variants arising from the left gastric artery are well documented in anatomic literature. When present, these aberrant vessels may traverse the hiatal dissection plane, placing them at risk for inadvertent injury during routine surgical maneuvers. Failure to recognize such variants can result in unexpected hemorrhage, impaired visualization, and potential compromise of the hiatal repair. Surgeons performing hiatal hernia repairs should maintain heightened awareness of possible vascular anomalies, particularly when dissection is unexpectedly limited or anatomy appears atypical. This case highlights the importance of meticulous technique and adaptability when variant vascular anatomy is encountered during crural dissection.

Case Report: Intestinal Tuberculosis

Presenting Author: Ben Murrell, DO

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Introduction: Intestinal tuberculosis (TB) is a rare form of extrapulmonary tuberculosis that can present with nonspecific gastrointestinal symptoms. It often mimics other conditions such as Crohn's disease or malignancy, making diagnosis challenging. This case report discusses the management of a 33-year-old female who presented to the hospital with abdominal pain and was found to have intestinal tuberculosis.

Case Description: A 33-year-old Asian American female presented with intermittent right lower quadrant abdominal pain for one month. Physical examination revealed mild tenderness in the right lower quadrant. Laboratory tests were largely unremarkable except for mild electrolyte derangements and mild anemia. Computed tomography (CT) scan was obtained which demonstrated thickening of the terminal ileum and right colon with adjacent abscess. This was also confirmed on Magnetic Resonance Imaging (MRI) of the abdomen/pelvis. Colonoscopy

demonstrated a 4 cm ulcerated, polypoid lesion at the ileocecal valve as well as multiple patchy erosions were identified in the ascending colon and the hepatic flexure. The colonoscopy findings were highly suggestive of fistulizing Crohn's disease and the patient was taken for surgery. Intra-operatively, the pathologist informed us that the biopsies from the colonoscopy returned as intestinal tuberculosis. The patient was started on a standard anti-tubercular therapy regimen. Post-operatively, she had improvement in abdominal pain and eventual return of regular bowel function.

Discussion: Intestinal TB remains a diagnostic challenge due to its nonspecific symptoms which can be seen in several other gastrointestinal diseases. This case highlights the importance of considering TB in the differential diagnosis of chronic abdominal complaints, especially in patients from endemic regions. Early recognition and prompt initiation of anti-tubercular therapy are crucial for favorable outcomes.

A Unique Finding: Aberrant Accessory Cystic Duct

Presenting Author: Rachel Black, DO

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Introduction: The occurrence rate of duplicate and aberrant duct, such as this one, is documented only in case reports, due to its rarity. Cholecystectomies are one of the most common procedures performed in the United States and bile duct injuries are of major concern during the case. Multiple strategies exist to minimize the risk of bile duct injuries including obtaining the critical view of safety, indocyanine green and firefly technology as well as intraoperative cholangiograms to allow better elucidation of the bile ducts.

Case Description: A 33-year-old female underwent an elective laparoscopic cholecystectomy with intraoperative cholangiograms identifying a duplicate and aberrant duct connecting the cystic duct to the right hepatic duct. She was seen in the emergency room twice before being referred to a general surgeon. An ultrasound revealed cholelithiasis and symptoms consistent with biliary colic. During the case difficulty in identifying structures and a small hole was made in what was believed to be the cystic duct, necessitated the need for the intraoperative cholangiograms to gain complete confidence in the biliary structures. In performing the intraoperative cholangiogram, we identified aberrant anatomy and took great care to avoid damage to any necessary structures.

Discussion: Although there are multiple types of well-known variants of biliary anatomy, aberrant anatomy should also always be kept in mind. Damage to the hepatic ducts or the common bile duct can result in life altering corrective surgeries. This case highlights the importance of confirming structures' identity before proceeding in a case. When the typical practices are not able to provide sufficient evidence of the structures' identity, intraoperative

cholangiograms can be used to proceed safely. This also allows real time identification of any bile duct injuries, which can minimize post operative complications.

Robotic Assisted Laparoscopic Detorsion of Gallbladder Volvulus: A Case Report

Presenting Author: Augustine Nguyen, DO

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Introduction: Gallbladder volvulus (GV), also known as torsion of the gallbladder, is a rare but potentially life-threatening surgical emergency. It occurs when the gallbladder twists on its mesentery which can lead to compromised vascular flow, subsequent ischemia, and necrosis. GV accounts for approximately 1 in every 365,000 cases of gallbladder disease. The pathophysiology is thought to involve cystic artery and duct rotation along an axis. However, accurate preoperative diagnosis is challenging, with only 10% of cases correctly identified before preoperatively. Imaging such as ultrasound (US) and computed tomography (CT) are often nonspecific.

Case Description: A 93 year old female with history of HTN, GERD, and atrial fibrillation (not on anticoagulation) who presented with RUQ abdominal pain radiating to her back after lunch. She had a previous admission for similar pain, but HIDA at that time was normal. Her pain resolved and she was eventually discharged. Of note, patient was an independent individual who performed all her daily activities without difficulty. Labs including AST, ALT, Alk Phos, and total bilirubin where normal. A CT Abdomen/Pelvis as well as an US Abdomen noted gallbladder distension without cholelithiasis, wall thickening or pericholecystic fluid. Patient underwent a robotic assisted laparoscopic cholecystectomy where acute cholecystitis and volvulus of the gallbladder were identified. This was detorsed in a clockwise fashion and the gallbladder was removed without complication. Patient recovered well and was discharged on postoperative day 1. Pathology revealed acute cholecystitis.

Discussion: Timely surgical intervention is crucial in managing GV. Diagnostic modalities are usually unable to detect GV with certainty. The standard approach involving laparoscopic or open cholecystectomy with with careful detorsion of the gallbladder is required. The increased maneuverability of robotic surgery allows this to performed with ease. When diagnosed and managed early, the prognosis is excellent, with mortality rates as low as 5%.