Dual Opportunistic Pneumonia in an Immunosuppressed Post-Transplant Patient: A Diagnostic Challenge in Acute Hypoxic Respiratory Failure

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M.D.[3] BACKGROUND:

Acute hypoxic respiratory failure in immunocompromised patients with underlying interstitial lung disease (ILD) presents a diagnostic challenge, as inflammatory exacerbations and opportunistic infections often share overlapping clinical and radiographic features. Delayed recognition of infection may worsen morbidity in transplant recipients receiving chronic immunosuppression.

OBJECTIVES:

To describe a case of dual opportunistic pulmonary infection initially suspected to be ILD exacerbation and to highlight diagnostic and management implications in immunosuppressed hosts.

METHODS:

We report a 62-year-old male with prior liver transplantation on tacrolimus, ILD, and myelodysplastic syndrome who presented with progressive dyspnea, increasing oxygen requirements, and intermittent low-grade fevers. Initial evaluation included laboratory studies, chest imaging, and broad infectious testing. Empiric antimicrobial therapy and corticosteroids were initiated. Due to persistent hypoxia, bronchoscopy with bronchoalveolar lavage (BAL) and expanded fungal diagnostics were performed.

RESULTS:

The patient required up to 15 L oxygen via Venturi mask. Laboratory studies were nonspecific, with no leukocytosis and low procalcitonin. Serum fungal markers were negative. BAL testing revealed positive Pneumocystis jirovecii PCR in multiple specimens and elevated bronchoalveolar Aspergillus antigen. Targeted antifungal and anti-Pneumocystis therapy was initiated with close monitoring of immunosuppressant levels. Oxygen requirements improved to 2 L nasal cannula prior to discharge after a 10-day hospitalization.

CONCLUSIONS:

This case underscores the importance of early invasive diagnostics when evaluating respiratory decline in immunosuppressed patients. Noninvasive biomarkers may be insufficient. Prompt recognition of co-infection and careful immunosuppression management may improve outcomes and inform clinical practice in transplant populations.

Submitted by Ahmed Al-Aizari, MD

Drug-Induced Pemphigus Vulgaris Following Ceftriaxone Use

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Abstract

Pemphigus vulgaris (PV) is a rare, potentially life-threatening autoimmune blistering disorder characterized by intraepidermal acantholysis due to IgG autoantibodies directed against desmoglein 1 and 3. While most cases are idiopathic, certain medications, including antibiotics, have been implicated as triggers in susceptible individuals. We report a case of a 61-year-old man with a history of non-ischemic cardiomyopathy, chronic kidney disease, and polysubstance use who developed widespread flaccid bullae involving the bilateral posterior axillae and gluteal regions six days after initiation of intravenous ceftriaxone for a suspected urinary tract infection. Histopathologic evaluation demonstrated suprabasal acantholysis, and immunofluorescence confirmed the diagnosis of pemphigus vulgaris. Ceftriaxone was promptly discontinued, and the patient was treated with high-dose systemic corticosteroids, resulting in significant clinical improvement. Ceftriaxone-induced PV is exceedingly rare, with few cases reported in the literature. The proposed mechanism involves drug-induced neoantigen formation or stimulation of pathogenic autoantibody production in genetically predisposed individuals. Early recognition of drug-induced PV is essential, as continued exposure may lead to extensive mucocutaneous involvement, secondary infection, and increased morbidity. Prompt withdrawal of the offending agent and initiation of immunosuppressive therapy are critical to improving patient outcomes.

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Submitted by Alpha Amadi, MD

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Submitted by Alpha Amadi, MD

Title: Ceftriaxone-Induced Pemphigus Vulgaris: A Rare Case Report

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Background:
Pemphigus vulgaris, a rare life-threatening autoimmune blistering disorder characterized by intraepidermal acantholysis secondary to autoantibodies against desmoglein 1 and 3. Although idiopathic in most cases, drug-induced Pemphigus vulgaris has been associated with several agents, including antibiotics such as cephalosporins specifically cephalexin, cefadroxil, ceftazidime and rarely cefixime. Ceftriaxone-induced Pemphigus vulgaris is exceedingly uncommon, with only a few cases described in literature.

Case Presentation:
A 61-year-old caucasian man with a history of non-ischemic cardiomyopathy and chronic kidney disease was admitted following recurrent ventricular fibrillation and suspected urinary tract infection. He was treated empirically with ceftriaxone. On day six of hospitalization, he developed erythematous plaques that evolved into flaccid bullae over the bilateral axilla, and gluteal area. Ceftriaxone was discontinued and high-dose intravenous corticosteroids were initiated. Histopathology of the skin biopsy revealed suprabasal acantholysis and an intraepidermal vesicle containing histiocytes and eosinophils. The dermis demonstrated a mild inflammatory infiltrate composed of lymphocytes and eosinophils; findings were consistent with Pemphigus vulgaris His skin lesions improved following corticosteroid therapy and cessation of ceftriaxone.

Discussion:
Ceftriaxone is generally well tolerated but, in rare instances, can trigger autoimmune blistering diseases such as Pemphigus vulgaris. Exclusion of known triggers and histopathologic confirmation are essential for diagnosis. Prompt withdrawal of the drug and initiation of immunosuppressive therapy are critical for achieving remission.

Conclusion:
This case highlights ceftriaxone-induced Pemphigus vulgaris as a rare and serious adverse drug reaction. Early recognition and drug discontinuation significantly improve outcomes.

Submitted by Alpha Amadi, MD

Tumor Lysis Syndrome in Stage IV Bilateral ER-/PR-, HER2-Low Breast Cancer

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Abstract

Tumor lysis syndrome (TLS) is a rare but potentially fatal oncologic emergency most commonly associated with hematologic malignancies and infrequently reported in solid tumors. With the increasing use of highly effective targeted therapies, TLS is being recognized more often in select solid malignancies, including breast cancer. We present the case of an 82-year-old woman with recently diagnosed bilateral metastatic infiltrating ductal carcinoma of the breast who developed TLS shortly after initiation of trastuzumab deruxtecan. The patient presented with acute hypoxic respiratory failure, hypotension, and lethargy two days following her first chemotherapy dose. Laboratory evaluation revealed acute kidney injury, hyperuricemia, hyperphosphatemia, hyperkalemia, elevated lactate dehydrogenase, and metabolic acidosis. Imaging demonstrated a marked reduction in tumor size compared with prior studies, indicating rapid tumor response. Despite aggressive fluid resuscitation, electrolyte abnormalities persisted, raising concern for TLS. Based on the Cairo–Bishop criteria, a diagnosis of TLS was established. The patient was treated with rasburicase, allopurinol, and intravenous hydration, resulting in rapid normalization of uric acid levels and metabolic derangements. TLS in solid tumors is associated with higher mortality rates than in hematologic malignancies, largely due to delayed recognition and low clinical suspicion. This case underscores the importance of maintaining vigilance for TLS in patients with solid tumors, particularly those with high tumor burden or marked sensitivity to antineoplastic therapy. Early risk stratification, close laboratory monitoring, and prompt initiation of prophylactic or therapeutic measures are essential to reduce morbidity and mortality as novel targeted therapies continue to expand treatment options for solid malignancies.

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Submitted by Alpha Amadi, MD

An Uncommon Case of Nephrotic Syndrome in the Setting of Multiple Myeloma

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Abstract

Nephrotic syndrome is an uncommon but clinically significant renal manifestation of multiple myeloma (MM), characterized by heavy proteinuria, hypoalbuminemia, edema, and increased risks of infection and thrombosis. Renal involvement in MM most frequently presents as cast nephropathy with subnephrotic proteinuria and acute kidney injury; however, nephrotic syndrome typically results from glomerular deposition of monoclonal proteins, most commonly light-chain (AL) amyloidosis. We report a 59-year-old man with type II diabetes, coronary artery disease, chronic orthostatic hypotension, chronic diarrhea, and significant weight loss who presented with recurrent syncope and hypotension. Examination revealed peripheral edema, and laboratory studies demonstrated severe hypoalbuminemia (1.0 g/dL), acute kidney injury, hyponatremia, and nephrotic-range proteinuria. A 24-hour urine collection showed 14 g of protein with elevated kappa and lambda light chains, though serum protein electrophoresis did not reveal a monoclonal spike. Bone marrow biopsy identified 10–15% lambda light chain–restricted plasma cells, and abdominal fat pad biopsy confirmed amyloid deposition, establishing the diagnosis of MM-associated AL amyloidosis.The patient's renal function improved with supportive management, though orthostatic symptoms persisted at discharge. This case highlights nephrotic syndrome as a rare initial presentation of MM and underscores the diagnostic challenges when classic CRAB criteria are absent. It emphasizes the importance of comprehensive evaluation, including tissue biopsy, in patients with unexplained nephrotic syndrome to ensure timely diagnosis and appropriate management of underlying plasma cell dyscrasia.

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Submitted by Alpha Amadi, MD

Title: Catastrophic Lupus Vasculopathy: Diffuse Renal and Visceral Artery Aneurysms Beyond Classic Lupus Nephritis

Author: Dr. Ali Amjad
Co-Authors: Dr. Sujatha Sekar, Dr. Sol Basabe, Dr. Annapoorna Unnikrishnan Nair, Dr. Muhammad Imran, Dr. Monica Juliana Ferrero

Background:
Systemic lupus erythematosus (SLE) is a multisystem autoimmune disease that commonly involves the kidneys as lupus nephritis, while medium-vessel aneurysmal disease is rare. Renal artery aneurysms (RAAs) are uncommon, typically incidental, and most often associated with atherosclerosis or fibromuscular dysplasia; rupture risk increases with symptoms or size progression.

Objectives:
To describe an unusual presentation of SLE-associated vasculopathy characterized by diffuse bilateral renal and visceral artery aneurysms and to highlight diagnostic and therapeutic considerations.

Methods:
We report the clinical course, laboratory findings, imaging characteristics, multidisciplinary management, and short-term outcomes of a 32-year-old woman with established SLE presenting with severe abdominal pain and refractory hypertension.

Results:
Laboratory evaluation demonstrated nephrotic-range proteinuria (13.6 g/24 h), hypoalbuminemia, elevated anti–double-stranded DNA titers, hypocomplementemia, and positive cryoglobulins, consistent with active immune-mediated disease. Computed tomography angiography—recommended for evaluation of suspected visceral aneurysms —revealed innumerable bilateral renal artery branch aneurysms, a contained rupture of a left renal pseudoaneurysm, splenic and renal infarcts, and additional visceral artery dilatations. The patient underwent successful coil embolization of the ruptured lesion, followed by high-dose corticosteroids and intravenous cyclophosphamide for presumed lupus-associated medium-vessel vasculitis. Blood pressure was controlled with multidrug therapy. Renal biopsy was deferred due to bleeding risk. Clinical stabilization was achieved prior to discharge.

Conclusions:
Extensive renal and visceral artery aneurysms represent a rare but life-threatening manifestation of SLE vasculopathy. Early vascular imaging and coordinated immunosuppressive and endovascular management are critical. Greater recognition of this phenotype may inform surveillance strategies and multidisciplinary care pathways in complex SLE, with implications for clinical practice and future research on lupus-associated vascular injury.

Submitted by Ali Amjad, MD

ABSTRACT

When the Shock Doesn't Work: Refractory Atrial Fibrillation in the Setting of Critical Illness

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Introduction

Atrial fibrillation (AF) with rapid ventricular response is a common complication in critical illness, often causing hemodynamic instability. While synchronized cardioversion is first-line therapy for unstable AF, cardioversion-refractory cases represent a significant challenge and reflect severe underlying physiologic stress. This case highlights the limitations of electrical cardioversion in patients with advanced malignancy and multiorgan failure.

Case Presentation

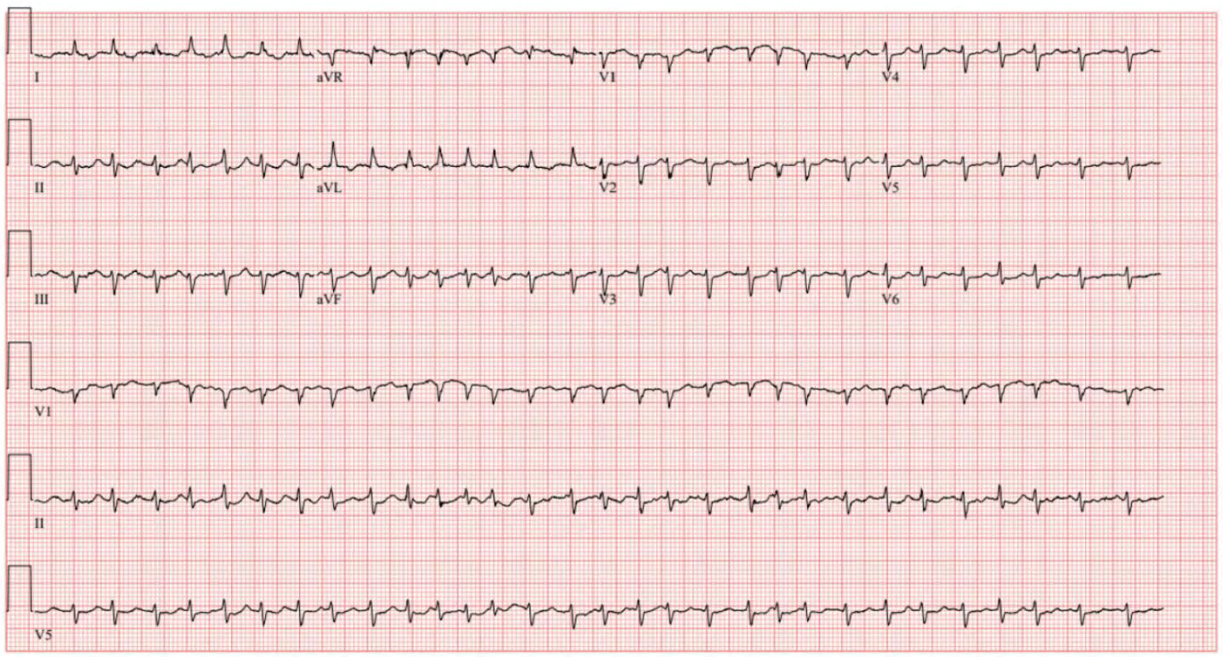
A 68-year-old female with stage IV uterine cancer on lenvatinib presented with three weeks of progressive weakness, oliguria, and altered mental status. Hospitalization was complicated by acute kidney injury requiring ICU transfer for dialysis planning, malignant ascites requiring paracentesis, and hypotension requiring norepinephrine. She developed acute AF with RVR (HR >200 bpm) with associated instability. Synchronized cardioversion was attempted three times at 200 J and once at 360 J without success. A 150-mg intravenous amiodarone bolus and continuous infusion resulted in successful conversion to sinus rhythm.

Discussion

Electrical cardioversion has a high success rate, with studies showing 92% conversion rates with biphasic 200 J shocks. However, failure is predictable in contexts of critical illness, advanced malignancy, and recent chemotherapy. Per ACC/AHA/ACCP/HRS guidelines, management after initial failure includes escalating to 360 J and using antiarrhythmic drugs like amiodarone, despite delayed onset. This sequence is a recognized pattern in refractory AF management. Shock-refractory AF with RVR is a marker of severe systemic illness and poor prognosis.

EKG:

Submitted by Aro Daniela Arockiam, MD



Submitted by Aro Daniela Arockiam, MD

Classic Campomelic Dysplasia: Prenatal Fetal MRI Characterization and Postnatal Correlation in a Lethal SOX9 Variant

Background

Campomelic dysplasia (CD) is a severe, typically lethal osteochondrodysplasia caused by heterozygous pathogenic variants in the SOX9 gene, essential for chondrogenesis and sex determination. Classic features include bowing and shortening of long bones (especially femora), bilateral clubfeet, hypoplastic scapulae and pelvis, 11 rib pairs, narrow thorax, Pierre Robin sequence (micrognathia, cleft palate), tracheobronchomalacia, spinal anomalies, and respiratory failure, with most affected infants dying in the neonatal period or early infancy from respiratory insufficiency.

Case Presentation

A 37-week gestation neonate (birth weight 2.321 kg) was delivered by repeat cesarean section. Prenatal ultrasonography at 32 and 35 weeks showed severe fetal growth restriction (<1st percentile), marked polyhydramnios, profound long bone shortening and bowing, bilateral clubfeet, micrognathia, persistent cervical hyperextension, and absent distal sacral vertebrae. Fetal MRI precisely delineated prominent polyhydramnios, severe cervical hyperextension with dorsal head tilt, absent distal sacral spine with angulation and increased lumbosacral lordosis, low-lying conus medullaris, small mandible suggestive of micrognathia and possible microstomia, short legs with clubfeet, and mild intracranial findings of uncertain significance. Postnatal whole exome sequencing confirmed a heterozygous likely pathogenic SOX9 variant. Skeletal survey demonstrated angulated bilateral femora, hypoplastic fibulae, sacrum, and scapulae, thoracic pedicle hypoplasia, cervical segmentation anomalies, focal cervical lordosis, narrow upper thorax, and 11 rib pairs. The neonatal course included immediate respiratory failure requiring intubation, tracheobronchomalacia, transient persistent pulmonary hypertension of the newborn, recurrent bacterial infections, feeding intolerance, osteopenia, anemia requiring transfusions, and mild cerebral ventriculomegaly. Despite intensive multidisciplinary support, the infant succumbed at 2 months to acute respiratory failure unresponsive to advanced airway interventions.

Discussion

This case exhibited nearly all hallmark features of classic CD—skeletal dysplasia with bowed/shortened limbs, clubfeet, thoracic hypoplasia, micrognathia, cervicospinal anomalies, and tracheobronchomalacia—closely aligning with the typical phenotype. Fetal MRI provided superior resolution of spinal dysraphism, cervical deformity, and craniofacial anomalies compared with ultrasound, enhancing antenatal diagnostic accuracy and perinatal planning. The prolonged survival to 2 months, while longer than many reported cases, remained limited by progressive respiratory compromise, consistent with the disease's natural history.

Conclusion

Fetal MRI precisely characterized the diagnostic skeletal and cervicospinal anomalies of campomelic dysplasia, including absent distal sacrum, spinal angulation, low conus, and severe cervical hyperextension. This case underscores the persistently grave prognosis, predominantly driven by unrelenting respiratory insufficiency.

Submitted by Aditi Chaurasia, MD

How Are We Treating Constipation in Arkansas? A Real-World Analysis from the Largest Academic Health System.

Authors:

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Background:

Constipation is a highly prevalent gastrointestinal disorder associated with impaired quality of life and substantial healthcare utilization. Although evidence-based treatment algorithms and multiple pharmacologic options exist, real-world prescribing patterns remain poorly characterized, particularly at the regional level. Understanding routine clinical management is essential to identify gaps in care and opportunities for quality improvement.

Objectives:

To characterize real-world treatment patterns for constipation in Arkansas using a large academic healthcare database and to evaluate utilization of laxative classes, advanced therapies, rectal agents, and treatments for opioid-induced constipation.

Methods:

We conducted a five-year retrospective observational study using a real-world database from the largest academic health system in Arkansas. Patients aged 10–90 years with an ICD-coded diagnosis of constipation who received treatment were included. Demographics and medication prescriptions were extracted and categorized into hyperosmotic, stimulant, stool softener, bulk-forming, rectal laxatives, prescription secretagogues/prokinetics, and opioid antagonists.

Results:

A total of 48,800 patients were included; 65.1% were female. Most patients were White (52.6%) or Black/African American (30.0%), and 67.9% were non-Hispanic. Only 43% of patients were prescribed any laxative. Among treated patients, hyperosmotic agents were most common (38%), followed by stimulant laxatives (30%), stool softeners (22%), and bulk-forming agents (2%). Rectal laxatives were prescribed in 33% of patients. Polyethylene glycol–based agents and potassium sulfate predominated among hyperosmotics, while sennosides and bisacodyl were the most common stimulants. Advanced prescription therapies were rarely used, with approximately 1% receiving linaclotide, lubiprostone, or prucalopride. Notably, 51% of patients had opioid exposure, yet only 10% received an opioid antagonist.

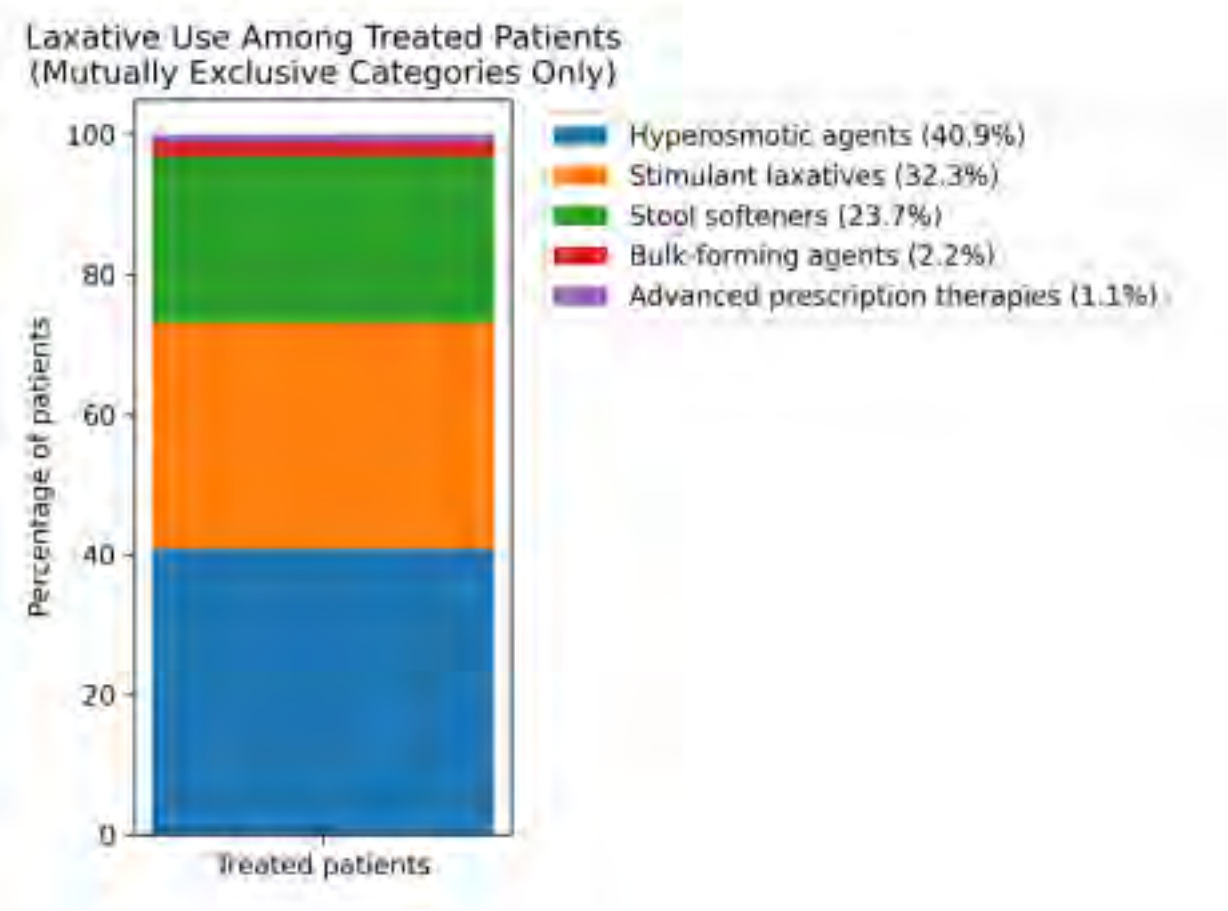
Conclusions:

In this large real-world analysis, pharmacologic treatment of constipation and use of advanced therapies were limited despite high opioid exposure, highlighting opportunities to improve guideline-based care in Arkansas.

Submitted by Adalberto Guzman, MD

Limitations:

Over-the-counter medication use could not be captured, and overlapping therapies limited mutually exclusive classification.



Submitted by Adalberto Guzman, MD

2026 Annual Meeting Poster Submission

From Faculty-Directed to Resident-Led: Building Leadership Through a Collaborative Didactic Curriculum

Background

Residency didactics are a core component of graduate medical education; however, traditional faculty-directed models may limit resident leadership development, ownership, and engagement. Learner-centered and active learning approaches are associated with improved educational relevance, yet few structured models intentionally promote resident leadership within didactic curricula.

Objective

To develop and implement a structured, resident-led, faculty-supported didactic curriculum that fosters resident leadership, teaching skills, and curriculum development while maintaining alignment with ACGME accreditation standards.

Methods

During one academic year, a faculty–resident curriculum committee was established within a family medicine residency program. Residents assumed leadership roles in identifying peer learning needs, selecting and sequencing topics, recruiting speakers, and facilitating interactive sessions. Faculty provided mentorship, oversight, and ensured alignment with accreditation standards. Outcomes were assessed using attendance tracking, session evaluations, and qualitative feedback from residents and faculty.

Results

Implementation was associated with increased resident engagement, reflected by improved attendance and greater active participation during didactic sessions. Residents reported higher satisfaction with content relevance and session quality. Faculty feedback highlighted growth in residents' leadership, teaching, and curriculum planning skills, as well as increased resident confidence in facilitating educational sessions.

Conclusion

A resident-led, faculty-supported didactic model enhances learner engagement while intentionally developing leadership and teaching competencies. This structured partnership offers a feasible,

Submitted by Annapoorna Nair, MD

sustainable, and adaptable framework that can be replicated by residency programs seeking learner-centered curricula aligned with accreditation standards.

Submitted by Annapoorna Nair, MD

Care Patterns and Stage at Presentation Among AYA With HL Across the Rural - Urban Continuum: A SEER Analysis

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Background: Hodgkin lymphoma (HL) is highly curable in adolescents and young adults (AYA), yet care patterns may vary by rurality and socioeconomic context.

Objectives: To evaluate associations of rurality and county income with stage at presentation and treatment documentation among AYA HL in SEER.

Methods: We analyzed 13,192 AYA HL cases (2000-2020). Rurality was classified using the Rural - Urban Continuum Code (RUCC3: metro ≥1M, metro <1M, non-metro). County median household income (inflation-adjusted) was categorized as Low (<$35,000-$49,999), Mid ($50,000-$64,999), or High (≥$65,000). Outcomes were distant stages and documented chemotherapy and radiation (yes vs no/unknown). Multivariable logistic regression adjusted for diagnosis era (5-year bins), sex, and race/ethnicity; chemotherapy & radiation models adjusted for stage.

Results: In era-adjusted models, distant-stage presentation was higher in males (OR 1.42, 95% CI 1.31-1.54) and non-Hispanic black patients (OR 1.39, 1.22-1.59). Rurality and income were not independently associated with distant stages (metro ≥1M vs <1M: OR 1.11, 0.99-1.25; high vs low income: OR 0.88, 0.74-1.04). Documented chemotherapy when compared to metro <1M was more likely in metro ≥1M (OR 1.65, 1.45-1.88) and non-metro (OR 1.49, 1.22-1.82) and in mid/high vs low-income counties (mid: OR 1.53, 1.26-1.85; high: OR 1.33, 1.10-1.61). Radiation documentation differed by stage and era but not by rurality or income.

Conclusions: In AYA HL, sociodemographic disparities in distant-stage presentation persist, while rurality and income show stronger associations with chemotherapy documentation than with stage.

RUCC3 Group	N=13192	Distant Stage %	Chemo Documented %	RT Documented %
Metro <1M	2,131	25.9%	49.2%	11.2%
Metro ≥1M	9,912	27.8%	58.3%	10.9%

Submitted by Aayushi Pareek, MD

Non-metro	1,144	25.7%	56.4%	10.4%
Unknown RUCC	5	–	–	–

Submitted by Aayushi Pareek, MD

Cardiovascular Outcomes of Glucagon-Like Peptide-1 Receptor Agonist Therapy in Non-Diabetic Peripheral Arterial Disease Individuals: A Propensity-Matched Analysis Using TriNetX Database.

Buthainah Alhwarat[1], MD, Khalid Sawalha[2], MD, Aakash Rana[3], MD, Brad Fugere[4], MS3, Tripti Shukla[4], MS3, Robert F. Spraggins II[1], MD, Landon Bruich[1], MD, Dillion Gibson[2], MD RPVI, Mohab Elnashar[1,] MD, Keshav Garg[1], MD, Tayal Bhupendar[2], MD, PhD, Andre R. Ramdon[5], MD and Subhi J. Al'Aref[2], MD

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Keywords: Glucagon-like Peptide, Peripheral Artery Disease, Diabetes Mellitus, Amputation.

Word count: 250.

Submitted by Buthainah Alhwarat, MD

Background:

Glucagon-like peptide-1 receptor agonists (GLP-1RAs) have demonstrated favorable cardiovascular outcomes in patients with type 2 diabetes mellitus and peripheral arterial disease (PAD), including reduced major adverse cardiovascular events (MACE). However, existing literature focuses almost exclusively on diabetic populations.

Objectives:

This study aimed to determine whether the cardioprotective effects of GLP-1RAs extrapolate to non-diabetic PAD individuals with regard to amputation and MACE rates.

Methods:

We conducted a retrospective cohort study using the TriNetX Network to compare outcomes in non-diabetic PAD patients receiving GLP-1RA's versus those who were not, over a period of 5 years. Propensity score matching was performed for age, gender, tobacco use, hypertension, chronic kidney disease, body mass index (BMI), and revascularization. The largest discrepancy between the two cohorts was in BMI, as the GLP-1RA group had a mean of 35.3 +/- 7.5 compared to 28.1 +/- 6.5 in cohort 2. The primary outcome was amputation rate, while secondary outcome was MACE (cardiac arrest, acute myocardial infarction, arrhythmias, or stroke). Kaplan-Meier analysis was used to estimate survival probability.

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Submitted by Buthainah Alhwarat, MD

Results:

After propensity score matching, 3,065 patients were included in each cohort. The amputation rate was 0.3% in the GLP-1RA group versus 2% in the control group (hazard ratio (HR) 0.2, 95% CI: 0.09-0.37, p=0.01). Moreover, patients in the GLP-1RA group had a MACE rate of 5.8% versus 16.6% (HR 0.5, 95% CI: 0.44-0.70, p<0.01) in the control group.

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Conclusion:

GLP-1RA's were associated with improved outcomes in non-diabetic PAD patients, with lower amputation and MACE rates over a 5-year period.

Submitted by Buthainah Alhwarat, MD

Background: TIPS manages portal hypertension complications but may precipitate cardiac decompensation or clinical HF events via abrupt venous return and preload increase.

Objectives: Examine pre-to-post TIPS changes in TTE parameters for prognostication of primary endpoints HF readmission and a composite outcome of HF readmission or volume overload requiring increased diuretics at index hospitalization.

Methods: Retrospective cohort of patients with TIPS during a ten-year period and pre-TIPS TTE. Data and TTE parameters extracted and analyzed with chart review and validated software. Continuous ORs estimated using quantitative logistic regression, with ROC analysis identifying cutoffs. Cutoff values were used to dichotomize TTE variables followed by qualitative logistic regression modeling. LR testing was performed when regression coefficients and OR could not be reliably estimated.

Results: Among evaluated TTE variables for CHF readmission, delta E/A showed strong association (OR 5.85, $p=0.052$; AUC 0.807, $p=0.003$; dichotomized OR 20.44). Fractional shortening had excellent ROC (AUC 0.906, $p<0.001$) but unstable modeling. E/e' and components implied worsening filling pressures via quasi-separation. For composite outcome, no parameter showed statistically significant quantitative associations. Expected right-sided, LA and LV GLS findings were absent likely due to underpowered size of study and availability of measurements.

Conclusions: Changes in pre-to-post TIPS diastolic parameters, particularly increased E/A and filling pressures, are potential predictors of post-TIPS CHF readmission. For composite outcomes, directional patterns broadly suggest high-output states despite instability from small samples. Larger cohorts are needed for robust multivariable modeling to refine risk stratification and confirm mechanisms.

Submitted by Benjamin Blaske, MD

A Psychiatric Perspective on Dysautonomia and Addison's Disease: A Case Study

Benjamin Hicks, D.O., David Draney, D.O., David E. Martin, Ph.D.

Introduction

Depression and anxiety have significant symptom overlap with various medical conditions. This case study follows the evolution of diagnoses and treatment in a patient with the chief complaint of anxiety, but with eventual diagnoses of Addison's disease and dysautonomia.

Case Presentation

A 50-year-old Caucasian female presented to outpatient psychiatry with anxiety and emotional trauma. Other symptoms included bilateral hand tremor and insomnia. Initially she was treated with duloxetine, but symptoms began to progress and worsen. She developed worsening mood, unstable gait, syncope and anorexia. Lab testing was conducted and revealed concerning low cortisol and DHEA. Out of concern for underlying medical illness, she was referred to endocrinology, who performed further testing, and diagnosed her with Addison's disease and began treatment with fludrocortisone. She continued to have issues with gait instability, fatigue and began to have irregular heart rate and variable blood pressures. She was then referred to the Cleveland Clinic neurology and was subsequently diagnosed with dysautonomia. She has recently added dextroamphetamine/amphetamine and her symptoms have improved, but have not resolved.

Discussion

Difficulty in achieving a complete diagnosis list with appropriate treatments arises when the presenting symptoms are non-specific. This case highlights the importance of interdisciplinary communication and appropriate testing when concern arises and underscores the value of medical training in the field of psychiatry. It also draws attention to known, but often overlooked, psychiatric symptoms in these conditions.

Submitted by Benjamin Hicks, DO

Title: Severe Hypocalcemia Unmasking Pseudohypoparathyroidism Type 1B

Authors: Baylee King DO, Ishita Gupta MD, Yuqi Cui MD, Fahiye Ali MD

Abstract:

Introduction: Pseudohypoparathyroidism (PHP) is a rare disorder characterized by parathyroid hormone (PTH) resistance, leading to hypocalcemia, hyperphosphatemia, and elevated PTH. PHP type 1B (PHP1B) features isolated PTH resistance without Albright hereditary osteodystrophy (AHO) phenotype and typically normal Gsα activity. It arises from epigenetic defects causing loss of maternal methylation at the GNAS locus (20q13). Manifestations vary and may include early-onset obesity, TSH resistance, intracranial calcifications, and hypocalcemia symptoms. Without a characteristic phenotype, diagnosis is often delayed until adulthood. Case: We present the case of a 22-year-old woman with hypothyroidism, obesity, and Roux-en-Y gastric bypass at age 15 presented with tetany, facial numbness, and diffuse paresthesias. She had a family history of PHP in a brother sharing the same mother. Labs showed severe hypocalcemia (corrected calcium 4.6 mg/dL), vitamin D deficiency (25-hydroxyvitamin D 25.1 ng/mL), and elevated PTH (620 pg/mL). EKG demonstrated wide-complex tachycardia (QRS 259 ms), with positive Chvostek and Trousseau signs. She received intravenous calcium, transitioned to oral calcium carbonate and calcitriol, and was discharged on supplementation after endocrinology consultation. A presumptive PHP1B diagnosis was based on biochemical profile, family history, and absent AHO features; outpatient genetic testing was planned. Conclusion: This case illustrates adult-onset PHP1B with life-threatening neuromuscular and cardiac complications. Prior bariatric surgery and vitamin D deficiency likely exacerbated underlying PTH resistance. Prompt recognition and treatment are critical to avert recurrent hypocalcemia and long-term sequelae.

Submitted by Baylee King, DO

Title: Hydralazine-Induced Lupus with Chronic Inflammatory Arthralgia and Globus Sensation Identified in Primary Care

First Author: Carlos Quevedo, MD

Second Author: Wayne Bryant Jr, MD

University of Arkansas for Medical Sciences

Background:
Hydralazine is a recognized cause of drug-induced lupus erythematosus (DIL), typically presenting with arthralgia and characteristic autoantibodies. Upper aerodigestive involvement is rare and has been reported in only four isolated cases.

Objectives:
To describe a rare, delayed presentation of hydralazine-induced lupus with chronic inflammatory joint pain and subsequent globus sensation identified and managed in primary care.

Methods:
We conducted a longitudinal case review of a patient followed in a family medicine clinic with intermittent rheumatology consultation. Clinical symptoms, medication exposure, diagnostic testing, specialty evaluations, and outcomes were reviewed.

Results:
A patient on long-term hydralazine for hypertension, started by a previous PCP, developed chronic joint pain for several months after starting. Due to persistent chronic joint pain new PCP initiated an autoimmune and inflammatory workup, including ANA, were negative. Symptoms persisted with a partial corticosteroid response. Polymyalgia rheumatica was ruled out along with other autoimmune conditions by a rheumatologist. Years later, the patient experienced a globus sensation, progressing to hoarseness, dysphagia, and odynophagia, unresponsive to PPIs, with an unremarkable gastrointestinal evaluation. Reassessment suggested DIL, and repeat autoimmune tests showed positive ANA, elevated anti-chromatin and anti-histone antibodies, normal complement, and negative anti-dsDNA. Discontinuing hydralazine resolved aerodigestive symptoms and improved joint pain in two months.

Conclusions:
This case highlights a rare manifestation of hydralazine-induced lupus presenting with upper aerodigestive symptoms after years of inflammatory disease. Limited literature on such presentations complicates early recognition in primary care, potentially delaying symptom relief and leading to unnecessary testing, highlighting the importance of ongoing medication review.

Submitted by Carols Quevedo, MD

Iron Overload and Pauci-immune Necrotizing Crescentic Glomerulonephritis Carol Vong*, DO[1], Anna Roulston, OMS III[4], Nicole Diaz, MD[2], Kelechukwu Megwa, MD[2], Gregory Mock, MD[2], Eric Martin, PhD[3] ,

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Hereditary hemochromatosis is an autosomal recessive genetic disorder with a mutation in the HFE gene located on chromosome 6. Abnormally low levels of hepcidin production result in an increase in iron absorption contributing to iron accumulation in various organs. Renal involvement is quite rare but there have been reports of deposits in tubular epithelial cells.[1]

This case study is about a 79 year old female with a medical history of hereditary hemochromatosis, atrial fibrillation on Warfarin, and hypertension who presented to hospital for increased creatinine levels and new onset right sided flank pain. Initial laboratory values notable for creatinine of 15.5, subtherapeutic INR of 1.18, blood urea nitrogen of 51 and ferritin level of 1574.8. Urine culture positive for leukocytes, while urinalysis showed 3+ occult blood with trace protein. She was started on Rocephin and intravenous fluids for management of urinary tract infection and acute kidney injury. The hospital course was complicated by Vancomycin resistant enterococci and antibiotics were switched to Linezolid. Despite fluids and antibiotics, patient kidney functions were still poor with creatinine of 7.1, blood urea nitrogen of 65 and potassium of 5.1. The decision was made to start hemodialysis but kidney function did not improve. The patient was transferred to a higher level of care facility for kidney biopsy to ascertain etiology. Renal biopsy confirmed diagnosis of pauci-immune necrotizing crescentic glomerulonephritis to be treated with rituximab with eventual transition to prednisone with mycophenolate.

The goal of this case study is to outline the presentation of hemachromatosis and pauci-immune necrotizing crescentic glomerulonephritis (NCGN). It highlights the difficulty in recognizing the association between iron accumulation and rapidly worsening kidney function. NCGN clinical presentation of hematuria, proteinuria and acute kidney injury is often associated with poorer prognosis.[2] Typically NCGN is unrelated to disorders of iron metabolism. In the setting of patients with hemochromatosis developing acute onset of worsening kidney functions, autoimmune vasculitis causes should be considered in the list of differential diagnoses. By doing so, appropriate treatment such as hemodialysis with immunosuppressant medications can be initiated to slow the progression of kidney damage.

1 Ozkurt S, Acikalin MF, Temiz G, Akay OM, Soydan M. Renal hemosiderosis and rapidly progressive glomerulonephritis associated with primary hemochromatosis. Ren Fail. 2014 Jun;36(5):814-6. doi: 10.3109/0886022X.2014.892391. Epub 2014 Mar 4. PMID: 24588645.
2 Syed R, Rehman A, Valecha G, El-Sayegh S. Pauci-Immune Crescentic Glomerulonephritis: An ANCA-Associated Vasculitis. Biomed Res Int. 2015;2015:402826. doi: 10.1155/2015/402826. Epub 2015 Nov 25. PMID: 26688808; PMCID: PMC4673333.

Submitted by Carol Vong, DO

Case report: Anomalous Origin of the Left Main Coronary Artery from the Right Coronary Cusp with Transseptal course in an Asymptomatic Middle-aged Male (AAOCA)

Dharmik Jadvani, MBBS[1], Aakash Rana, MD[2], Jack Xu, MD[3], David Duncan, MD[3], Samuel Turner, MD[3] and Robert Preli, MD[3]

Affiliations:

1. University of Arkansas for Medical Sciences, Little Rock, Arkansas, USA;
2. Central Arkansas Veterans Affairs Health System, Little Rock, Arkansas, USA
3. Novant Health Forsyth Medical Center, Winston-Salem, North Carolina, USA;

Abstract

Background:
Anomalous aortic origin of the coronary artery (AAOCA) is a rare congenital abnormality with associated with myocardial ischemia and sudden cardiac death. We present a case of L-AAOCA incidentally identified on CT imaging during ischemic evaluation, which was managed conservatively in a young male patient

Case: A 45-year-old male with hyperlipidemia presented for ischemic evaluation due to ongoing intermittent, brief, left-sided chest pain for 2 months, occurring at rest without associated exertion, relieving factors or other cardiac symptoms. Electrocardiogram (ECG) showed sinus bradycardia and left ventricular hypertrophy. Transthoracic echocardiogram (TTE) showed normal biventricular and diastolic function (LVEF 60-65%), and no valvular abnormalities. Coronary CT angiography revealed left main coronary artery arising from the right coronary cusp, coursing transseptally between the aorta and interventricular septum, without plaque or stenosis. Exercise stress echo was negative without any abnormalities.

Discussion: This young patient was incidentally found to have L-AAOCA with a transseptal course on CT imaging. He subsequently underwent stress testing, which revealed no evidence of ischemia; therefore, the patient was managed conservatively rather than with surgical intervention.

Conclusion: Patients with L-AAOCA should undergo stress testing to guide the decision between conservative management and surgical intervention.

Submitted by Dharmik Jadvani, MBBS

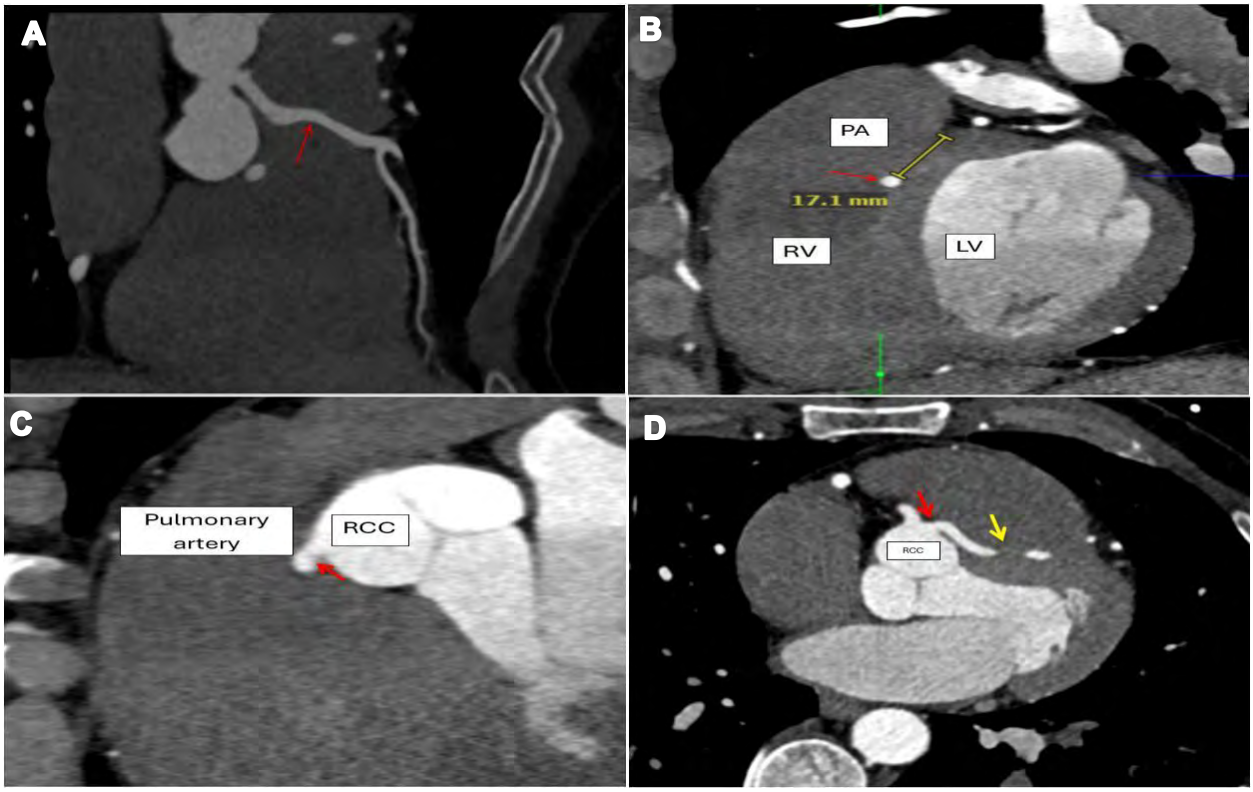

Figure 1: Coronary CT angiography demonstrating anomalous origin and course of the left main coronary artery (red arrow). (A) Reconstructed image showing no stenosis. (B) Interventricular course, 17.1 mm deep in the myocardium (yellow bracket). (C) Origin from the right coronary cusp, traversing anteriorly and inferiorly. (D) Subpulmonic route through the interventricular septum (yellow arrow).

Submitted by Dharmik Jadvani, MBBS

Case report: Chiari network related infective endocarditis

Dharmik Jadvani, MBBS1, Aakash Rana, MD2, Jack Xu, MD3
Affiliations:
1. University of Arkansas for Medical Sciences, Little Rock, Arkansas, USA;
2. Central Arkansas Veterans Affairs Health System, Little Rock, Arkansas, USA
3. Novant Health Forsyth Medical Center, Winston-Salem, North Carolina, USA;

Abstract

Background:
Infective endocarditis (IE) typically involves cardiac valves, while non-valvular sites such as the Chiari network are rare and underrecognized. Reports of the chiari network (fenestrated embryologic remnant in the right atrium, present in 2-3% of the population is usually a benign variant) endocarditis are limited.

Case:
A 67-year-old male with prior MSSA spinal infection presented with malaise, dyspnea, rash, and leukocytosis. Blood cultures remained negative. Computed tomography chest revealed bilateral nodular opacities, and a transthoracic echocardiogram (TTE) suggested a right atrial mass. Transesophageal echocardiography (TEE) demonstrated a prominent Chiari network with a new oscillating echodensity (0.5 × 0.4 cm) concerning for Chiari network endocarditis.

Discussion:
Advanced imaging such as TTE and TEE are reliable tools for diagnosing chiari network IE. There are no guidelines for the management of chiari network IE. We treated the patient with prolonged antibiotic therapy; in some cases surgical approch can be considered as well.

Conclusion:
Chiari network endocarditis is a rare and often overlooked cause of IE. Its diagnosis can be challenging, as it may mimic other intracardiac masses such as thrombus, vegetations, or tumors on imaging. Early recognition is essential to guide appropriate treatment and improve clinical outcomes.

Figure:

Submitted by Dharmik Jadvani, MBBS

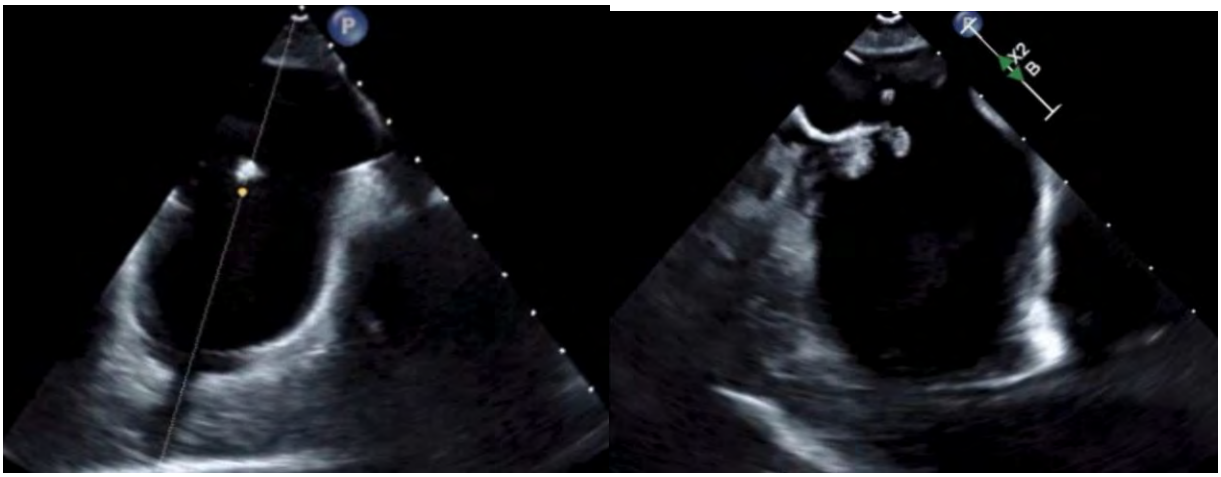

Figure 1: X-plane TEE confirming echodensity attached to Chiari network without valvular involvement (on Left); TEE at 45° demonstrating an oscillating mass attached to Chiari network (on Right).

Submitted by Dharmik Jadvani, MBBS

Incidence and Predictors of High-grade Atrioventricular Block after Transcatheter Tricuspid Valve Replacement: a real-world analysis

Authors: Dharmik Jadvani[1], Sai Nikhila Ghanta, MD[2]; Bhupender Tayal, MD[2]

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Background:

Transcatheter tricuspid valve replacement (TTVR) offers reliable reduction of severer tricuspid regurgitation with a minimal invasive approach and improves quality of life. However, post procedural conduction disturbances particularly high-grade atrioventricular nodal block (HAVB) remains a significant concern. Despite this, predictors of HAVB after TTVR remain poorly defined. We aimed to explore the incidence, risk factors, and clinical implications of HAVB.

Methods:

Using TriNetX, a US collaborative database, we conducted retrospective study on patients who underwent TTVR identified using relevant ICD-10-PCS codes (02RJ3JZ, 02RJ3KZ, 02RJ38Z, X2RJ3RA) and CPT code (0646T). Patients with prior heart transplant (ICD-10-CM Z94.1 / CPT 33945) or permanent pacemakers (ICD-10-CM Z95.0) were excluded. Two cohorts were defined: patients who developed HAVB within 1 month of TTVR vs those who did not at 1 month. Baseline demographic, clinical, and comorbidity data were extracted. Variables included age, sex, heart failure status, conduction system disease, renal function, and comorbid conditions. Outcomes of interest were the incidence of HAVB at 1 month, baseline predictors of this complication and pacemaker implantation rate.

Results:

Of the total 337 patients who underwent TTVR, 34 patients (10%) developed HAVB within a month post TTVR. Patients who developed HAVB were older (mean age 71.8 ± 13.3 vs 62.9 ± 18.8 years, p=0.01, SD 0.55) and hypertensive (84% VS 63%, p=0.0167, SD 0.50). Prevalence of end-stage renal disease was significantly higher in the HAVB group. Conduction system abnormalities (CSA): first-degree AV block, p=0.0002; left anterior fascicular block, p<0.0001; left bundle branch block, p<0.0001; persistent atrial fibrillation p=0.0112; atrial flutter p<0.0001, were disproportionately higher in the HAVB cohort. Importantly, 60% of patients with HAVB required pacemaker implantation within 30 days compared with 3.8% in the non-HAVB group (Risk Ratio 15.7, 95% CI 7.9–31.2, p<0.001).

Conclusion:

In this real-world analysis of patients undergoing TTVR, 10% developed HDAVB within 1 month, and the majority required pacemaker implantation. Baseline CSAs emerged as significant risk factors. Large multicenter studies are needed to identify high risk patients in the peri-procedural planning of TTVR.

Clinical Implication (not counted in character limit):

Submitted by Dharmik Jadvani, MBBS

My study will help enable cardiovascular clinicians to.. recognize the baseline risk factors for HDAVB and help with procedural planning and post-procedural management.

Supplementary data for authors to review:

Table 1. Baseline Characteristics of Patients with vs. without HDAVB after TTVR

Comparison between patients with HDAVB (n=34) and Control (n=303).

Characteristic	HDAVB (n=34)	Control (n=303)	P-value	Std. Diff
Demographics				
Age, mean ± SD	71.8 ± 13.3	62.9 ± 18.8	0.010	0.5466
Female, n (%)	25 (74%)	159 (62%)	0.2689	0.2138
Black or African American, n (%)	10 (31%)	31 (12%)	0.0034	0.4790
Diagnoses				
Chronic kidney disease, n (%)	15 (47%)	93 (36%)	0.2386	0.2182
End stage renal disease, n (%)	10 (29%)	18 (6%)	<0.0001	0.6474
Diabetes mellitus, n (%)	10 (31%)	71 (28%)	0.6669	0.0796
Hypertension, n (%)	27 (84%)	162 (63%)	0.0167	0.4996
Ascites, n (%)	10 (31%)	47 (18%)	0.0823	0.3037
Edema, n (%)	14 (44%)	118 (41%)	0.8521	0.0349
Peripheral vascular disease, n (%)	10 (31%)	39 (15%)	0.0223	0.3878
COPD, n (%)	10 (31%)	47 (18%)	0.0823	0.3037
First-degree AV block, n (%)	10 (31%)	23 (9%)	0.0002	0.5794

Submitted by Dharmik Jadvani, MBBS

Left anterior fascicular block, n (%)	10 (31%)	14 (5%)	<0.0001	0.7071
Left bundle-branch block, n (%)	10 (31%)	10 (4%)	<0.0001	0.7704
Right bundle-branch block, n (%)	10 (31%)	59 (23%)	0.2994	0.1874
Persistent AF, n (%)	17 (53%)	79 (31%)	0.0112	0.4658
Chronic AF, n (%)	10 (31%)	83 (32%)	0.9050	0.0225
Unspecified AF/flutter, n (%)	30 (94%)	176 (68%)	0.0029	0.6821
Atypical atrial flutter, n (%)	10 (31%)	12 (5%)	<0.0001	0.7381
Sick sinus syndrome, n (%)	10 (31%)	19 (7%)	<0.0001	0.6339
Supraventricular tachycardia, n (%)	10 (31%)	40 (16%)	0.0270	0.3770
Ventricular tachycardia, n (%)	10 (31%)	33 (13%)	0.0058	0.4555
Laboratory Values				
Creatinine, mg/dL	1.28 ± 0.53	1.19 ± 0.76	0.4865	0.1478
Hemoglobin, g/dL	12.3 ± 2.18	12.2 ± 2.16	0.7967	0.0494
Albumin, g/dL	4.15 ± 0.62	3.88 ± 0.63	0.0279	0.4287
INR	1.84 ± 1.48	1.51 ± 0.59	0.0232	0.3011

GFR, mL/min/1.73m^2	53.5 ± 25.7	63.7 ± 27.3	0.0476	0.3852
LVEF (%)	51.7 ± 7	57.2 ± 8.4	0.0589	0.7186
Medications				
High-ceiling diuretics, n (%)	31 (97%)	208 (81%)	0.0246	0.5247
Direct factor Xa inhibitors, n (%)	19 (59%)	115 (45%)	0.1176	0.2960
Warfarin, n (%)	14 (44%)	93 (36%)	0.4034	0.1549
Beta blockers, n (%)	30 (94%)	209 (81%)	0.0797	0.3831
ACEi/ARB, n (%)	22 (69%)	126 (49%)	0.0353	0.4091
SGLT2 inhibitors, n (%)	11 (34%)	48 (19%)	0.0378	0.3613
Aldosterone antagonists, n (%)	18 (56%)	98 (38%)	0.0486	0.3691

Title: Acute Hypoxemia in a Dialysis Patient with Patent Foramen Ovale

Author: Dat Le, D.O, Gregory Mock, M.D, Roddy Lochala, D.O

Unity Health Family Medicine Residency

Introduction

Hypoxemia is a known complication of dialysis, typically resulting from hemodynamic and acid–base changes. While usually well tolerated, hypoxemia can become severe in patients with intracardiac shunts such as a patent foramen ovale (PFO).

Case Description

A 62-year-old male with end-stage renal disease on peritoneal dialysis presented with altered mental status and hypotension. Initial evaluation revealed leukocytosis, metabolic derangements consistent with renal failure, and mild hypoxemia. Despite clinical improvement with fluids and vasopressor support, the patient developed episodic oxygen desaturation and hypotension during peritoneal dialysis. Computed tomography angiography ruled out pulmonary embolism, and venous duplex studies were negative for acute thrombosis. Transthoracic echocardiography demonstrated preserved left ventricular systolic function and a significant right-to-left shunt through a patent foramen ovale. Reduction of peritoneal dialysis volume resulted in clinical improvement. The patient was subsequently transferred for definitive PFO closure.

Discussion

Increased intraperitoneal volume during dialysis likely elevated right atrial pressure, promoting right-to-left shunting across the PFO and resulting in hypoxemia. Dialysis may precipitate or worsen hypoxemia in patients with a PFO. Recognition of this mechanism is critical, and echocardiography should be considered in dialysis patients with unexplained hypoxemia. Definitive management may require PFO closure.

Submitted by Dat Le, DO

Acute-on-Chronic Weakness Unmasked: AL Amyloidosis Masquerading as Guillain-Barré Syndrome

Nguyen Elizabeth DO, Amjad Ali MD, Ghanem Nicholas MD, Linares Astrid MD, Rivera Gilberto MD
Gangar Komal MBBS, Lopez-Gonzales Diorella MD

Background

AL amyloidosis is a plasma cell dyscrasia characterized by extracellular deposition of misfolded immunoglobulin light chains, often resulting in multisystem involvement. Peripheral neuropathy with prominent autonomic features is a recognized manifestation and may closely mimic immune-mediated neuropathies such as Guillain-Barré syndrome (GBS), particularly early in the disease course.

Case

A 52-year-old African American female with HOCM, orthostatic hypotension, CKD stage 3 due to diabetes, prior stroke, and history of DVT presented with 9 months of progressive bilateral leg weakness and acute worsening over 2 weeks with inability to ambulate. Symptoms included syncope, diarrhea, and urinary retention. On admission found to be positive for enterovirus. Exam showed 3/5 strength and diffuse areflexia. MRI revealed mild cauda equina enhancement, and CSF showed albuminocytologic dissociation, raising concern for GBS. She received 5 days of IVIG with minimal improvement.

However, workup incidentally found elevated lambda free light chains with abnormal ratio. Initial SPEP was negative, but repeat testing showed monoclonal protein in serum and urine with positive immunofixation and MALDI-TOF. Fat pad and bone marrow biopsies were Congo red– positive, confirming systemic AL amyloidosis with lambda light chain monoclonal gammopathy.

Conclusion

This case highlights how AL amyloidosis can mimic GBS, creating diagnostic uncertainty. In the primary care setting, progressive leg weakness—especially with autonomic symptoms—should not be dismissed as deconditioning, as it may signal serious systemic disease. Early recognition and evaluation for plasma cell dyscrasia are essential to initiate targeted therapy and improve outcomes.

Submitted by Elizabeth Nguyen, DO

Soft Embalmed Cadavers as a Teaching Tool: A Quality Improvement Pilot Study in Intra-Articular Joint and Bursa Injection Training

Emory Reyes, DO; Nam Vo, DO; Courtney Chamberlin, DO; Joshua Estes, MD; Erica Malone MS, PhD.

Background

Ultrasound (US) based intra-articular and bursal injections are the gold-standard for musculoskeletal pain relief due to its superior accuracy and clinical efficacy. Currently, medical trainees are taught and practice these procedures in either the high-stakes environment of the clinic or on low-fidelity models. Soft-embalmed cadavers (SECs) provide a high-fidelity platform for procedural training and anatomic identification by preserving natural joint mobility and tissue planes encountered in clinical practice.

Objectives

To conduct a pilot study on resident experience and confidence after practicing procedures on SECs utilizing the Plan-Do-Study-Act model.

Methods

Residents and medical students completed a split-group lab with one hour of formalin-based cadaveric identification and one hour performing the SEC injection protocol. Learners received an instructional guide in advance, and pre- and post-session surveys assessed confidence in ultrasound-based anatomic identification, needle handling, and upper- and lower-extremity ultrasound-guided joint injections.

Results

Upper extremity (UE) and lower extremity (LE) categories were assessed. Universal increase was noted in confidence levels based on the Likert Scale (0-5). Notably, every LE category and UE ultrasound anatomy identification and guided injections showed a statistically significant, positive shift ($p < 0.05$) via the sign test, with the greatest gains observed in ultrasound-guided suprapatellar and infrapatellar intra-articular knee injections.

Conclusion

This pilot study demonstrates that soft-embalmed cadavers (SECs) can enhance graduate medical education in Arkansas by closely simulating live tissue. Their use was associated with increased trainee confidence in procedural skills, supporting easy integration into other specialty programs for other specialty-specific applications.

Submitted by Emory Reyes, DO

Background

In Arkansas, defendants found not competent to stand trial, often due to psychotic disorders, may undergo competency restoration at the Arkansas State Hospital (ASH). Ideally, restoration occurs promptly; however, limited resources frequently delay psychiatric care. While prior research has demonstrated that treatment delays worsen psychiatric severity, their impact on forensic outcomes is less understood.

Objectives

This study examines the relationship between time spent in jail and time to competency restoration. It also evaluates differences between defendants restored to competency and those deemed non-restorable.

Methods

Forty-three defendants with a primary psychotic disorder admitted to ASH for competency restoration were identified. Two Fine–Gray models and a linear regression were used to assess time to competency restoration. Multivariate logistic regression was conducted to identify factors associated with non-restorability.

Results

After adjustment, every additional 100 days spent in jail was associated with a 20% reduction in the likelihood of competency restoration (HR = 0.80; 95% CI: 0.58–1.10; p = 0.17). On average individuals diagnosed with schizophrenia and Black individuals spent more days in jail (p = 0.272 and p = 0.600, respectively). Longer jail stays were associated with increased odds of being deemed non-restorable (OR = 1.48; 95% CI: 0.95–2.31; p = 0.084).

Conclusion

Although results were not statistically significant, they are clinical significance as longer jail time may reduce the likelihood or delay the process of competency restoration. Race, diagnosis, sex, location, and offense type may influence outcomes. Once deemed incompetent, defendants were more often found non-restorable than restored.

Submitted by Emily Waller, MD

TITLE: Mixed experience with AI for critical findings in neuroradiology in the reporting room? Positives and pitfalls.

AUTHORS: Giridhar Dasegowda, Darrin A McFall, Omer Hamza, Ahmed Abdelmonem, Marianne Nabbout, Suryakala Buddha, Sanjaya Viswamitra, Department of Radiology, UAMS

Background: Artificial Intelligence (AI) is expected to identify acute findings, prioritize patients, and improve patient care. The effectiveness of AI models after deployment not well studied.

Methods: 497 consecutive CT head and neck angiograms in a tertiary center were retrospectively reviewed for Intracerebral hemorrhage (ICH), subdural hematoma (SDH), aneurysm, and large vessel occlusion (LVO). Radiology reports (fellowship-trained neuroradiologists) were compared to the AI output (commercial vendor). Cohen's Kappa agreement between the radiology reports and the AI was measured.

Results: 497 patients, 231 men, 266 women (mean age 58±18 years), scanned over 30 days, were evaluated by AI for 1988 potential findings. Critical findings were 26 aneurysms, 23 LVO, 18 ICH, and 13 SDH. AI processed 66% (1319/1988), failed in 34% (669/1988 included indications for 200 SDH, 200 ICH, 139 LVO, and 130 aneurysms). Successfully processed exams demonstrated Cohen's kappa agreement between radiologist and AI of 0.73 ICH, 0.61 LVO, 0.54 SDH, and 0.45 for aneurysm. In the subset that AI failed to process, the following diagnosis were made:15 SDH (0.07%), 12 ICH (0.06%), 2 aneurysms (0.02%), and 7 LVO (0.05%). The exhibit will review the reasons for variability in agreement and for AI processing failure.

Conclusion: Awareness that AI results may have variable agreement and that it can fail to process in a substantial number improves real world expectations and utilization of AI. Understanding reasons for post deployment success and failure could modify scanning protocols. Such studies are required to educate vendors on the need for retraining to improve AI output.

Submitted by Giridhar Dasegowda, MD

When Renal Failure Turns Deadly: Unmasking Calciphylaxis

Gail Ettienne, MD., Maya Advani, MD., Nassim Zanganeh, DO.,

Introduction

Calciphylaxis is a rare, life-threatening vasculopathy characterized by medial calcification of small blood vessels, resulting in thrombosis, tissue ischemia, and painful cutaneous necrosis. It most commonly occurs in patients with end stage renal disease on dialysis due to disturbances in calcium–phosphate metabolism and parathyroid hormone regulation. Because of its rarity and nonspecific presentation, diagnosis is frequently delayed, leading to severe tissue damage and a high risk of infection and sepsis.

Case presentation

A 45-year-old male with end-stage renal disease (ESRD), diabetes, and severe peripheral vascular disease presented with extensive painful necrotic lesions on the perineum and extremities. Initially suspected of having Fournier's gangrene, the patient was diagnosed with severe calciphylaxis following urgent debridement. Due to a history of recurrent infections and multiple lower extremity amputations, the condition required complex, multidisciplinary management. Treatment with sodium thiosulfate was initiated to address the underlying vascular calcification.

Discussion

This patient was initially diagnosed with Fournier's gangrene, leading to significant diagnostic delay. In addition, this patient underwent surgical debridement, which was risky and possibly contributory to the non-healing necrotic wounds that served as portals for infection and was likely instrumental in early mortality one month post diagnosis, primarily due to sepsis.

This case highlights the need for early recognition and rapid diagnosis in high-risk dialysis patients with severe comorbidities, to manage this life threatening, painful condition, as noted by the National Institutes of Health (NIH).

Submitted by Gail Ettienne, MD

Prescribe with Purpose: A Quality Improvement Initiative to Increase Resident Confidence in Pain Agreements

Rivera-Dominguez, Gilberto MD; Nguyen, Elizabeth, DO; Ghanem, Nicolas Nadim, MD; Norris, Amber, MD.

Abstract

Background: Chronic pain affects approximately 20% of U.S. adults and is a major driver of opioid prescribing in primary care. While opioid safety guidelines have evolved toward patient-centered, harm-reduction approaches, pain agreements remain inconsistently implemented due to clinician discomfort and stigma.

Objective: To increase resident and faculty comfort with pain agreements and reduce the proportion of patients on chronic opioid therapy without a documented agreement.

Methods: We conducted a quality improvement educational intervention within a single family medicine residency clinic. Using Epic SlicerDicer, we tracked the internal metric of patients prescribed chronic opioids without a pain agreement across all prescribers (faculty n=10, residents n=17). On September 16, 2025, residents and faculty participated in a one-hour educational session addressing the rationale for pain agreements, stigma reduction, HER-based workflows, standard opioid management, and morphine milligram equivalent (MME) calculation. A pocket MME conversion guide was provided. Outcomes were compared four months pre-intervention (May–Sept 2025) and four months post intervention (Sept 2025–Jan 2026).

Results: Patients without a pain agreement decreased from 106 pre-intervention to 90 post-intervention. Resident surveys showed improved confidence, with 57% reporting extreme confidence in MME calculation post-intervention compared to 46% reporting extreme lack of confidence pre-intervention. Confidence in using opioid risk assessment
tools increased from 8% to 100%.

Submitted by Gilberto Rivera-Dominguez, MD

Conclusions: A targeted educational intervention improved clinician confidence and early adoption of pain agreements, supporting safer opioid prescribing in primary care.

Submitted by Gilberto Rivera-Dominguez, MD

B-Cell Acute Lymphoblastic Leukemia Presenting as Diffuse Osseous Pain with Imaging Initially Concerning for Sickle Cell Disease in a 19-Year-Old Male

Gilberto Rivera-Dominguez, MD; Monica Ferrero Caicedo, MD.

Abstract

Background: Persistent musculoskeletal pain in adolescents and young adults is frequently attributed to benign or inflammatory etiologies. However, progressive symptoms with systemic features should prompt evaluation for hematologic malignancy.

Case Presentation: A 19-year-old previously healthy Hispanic male presented with recurrent emergency department visits for progressive back and joint pain, initially managed as inflammatory or musculoskeletal in origin. Imaging revealed serpiginous marrow signal abnormalities throughout the pelvis and spine, interpreted as most consistent with sickle cell disease. Despite outpatient orthopedic evaluation, his pain worsened to the point of inability to ambulate, prompting hospital admission. Laboratory evaluation demonstrated elevated LDH, and bone marrow biopsy confirmed B-cell Acute Lymphoblastic Leukemia (B-ALL) with extensive skeletal and skull marrow involvement. He was treated with Hyper-CVAD–based chemotherapy and intrathecal therapy, with supportive transfusions and multidisciplinary pain management.

Conclusion: This case highlights an atypical presentation of B-ALL mimicking sickle cell– related bone infarction on imaging. Recurrent healthcare visits, progressive functional decline, and elevated LDH were critical red flags. Integration of imaging findings with epidemiologic context is essential to avoid anchoring bias and diagnostic delay. Early hematologic evaluation should be considered in young patients with persistent bone pain and systemic symptoms.

Submitted by Gilberto Rivera Dominguez, MD

TITLE

Code Pink: Navigating Breast Emergencies from Trauma to Infection

Background

Breast-related emergencies, though relatively rare, place radiologists at the forefront of diagnosis and patient management. A wide spectrum of breast complaints present in the emergency department, ranging from trauma to infectious processes, necessitating rapid and accurate assessment to ensure appropriate care.

Objectives

This exhibit aims to identify the diverse causes of emergency breast complaints, including traumatic injuries (hematomas, seatbelt injuries), non-traumatic inflammation (puerperal and non-puerperal mastitis, Mondor's disease), and complications related to implants or recent procedures. It describes characteristic imaging features to distinguish between emergent conditions and mimics, particularly granulomatous mastitis and inflammatory breast cancer. Furthermore, the presentation outlines protocols for triage, management, and the differentiation of non-emergent findings, such as incidental palpable masses, that may not require immediate intervention.

Conclusions

Mastering the radiological assessment of breast emergencies is essential for accurate diagnosis and treatment planning. These findings and recommendations provide a framework for navigating complex cases, ensuring radiologists can effectively distinguish between urgent pathologies, benign mimics, and cases requiring routine follow-up, ultimately improving patient outcomes in the emergency setting.

Submitted by Heta Ladumor, MD

Title: Intravenous Immunoglobulin-Associated Transfusion-Related Acute Lung Injury in a Patient With Chronic Inflammatory Demyelinating Polyneuropathy

Authors: Ayfa Bajwa, M.D., Ahmad Kharabsheh, M.D., Hanin Lataifeh Hanin, M.D., Ziad Ghneim, D.O.

Unity Health White County Medical Center

Introduction

Chronic Inflammatory Demyelinating Polyneuropathy (CIDP) is an immune-mediated peripheral neuropathy characterized by progressive, symmetric motor and sensory dysfunction. Intravenous immunoglobulin (IVIG) is a cornerstone of therapy and is generally well tolerated. Transfusion-related acute lung injury (TRALI) is a rare, but potentially fatal complication of blood products and immunoglobulin infusions, presenting with acute hypoxemic respiratory failure and non-cardiogenic pulmonary edema, typically within hours of exposure.

Case Presentation

A woman with a history of CIDP presented for a scheduled IVIG infusion, which she had previously tolerated without complications. Following the infusion, she developed acute dyspnea followed by cardiac arrest. She was resuscitated and placed on mechanical ventilation. Chest imaging revealed bilateral pulmonary edema with ground-glass opacities and interlobular septal thickening, consistent with acute lung injury. Cardiac evaluation did not demonstrate evidence of cardiogenic pulmonary edema. She was treated with lung-protective mechanical ventilation in accordance with acute respiratory distress syndrome protocols and received supportive intensive care. Her respiratory status gradually improved, and she was successfully extubated after three days without residual pulmonary sequelae.

Discussion

IVIG-associated TRALI is a rare but severe adverse reaction that can occur in patients with prior tolerance to immunoglobulin therapy. The abrupt onset of hypoxemia, pulmonary edema, and cardiovascular collapse shortly after infusion underscores the importance of early recognition. Differentiating TRALI from other causes of acute respiratory failure, such as volume overload or cardiogenic pulmonary edema, is critical. Clinicians should maintain a high index of suspicion for TRALI in patients who develop sudden respiratory compromise following IVIG administration.

Submitted by Hanin Lataifeh, MD

Delayed Onset Pacemaker Atrial Lead Perforation Presenting with Hemorrhagic Pleural Effusion and Respiratory Failure (RE-SUBMISSION)

Authors: Saud Faisal Sarhan MD, Hanin Lataifeh MD, Aro Daniela Arockiam MD, Indira Ojha MD, Ayfa Bajwa MD, Sahaja Carpenter MD, Courtney Hicks MD, Eric Robinson MD, David Martin PhD.

Background

Pacemaker lead perforation is a rare but life-threatening complication, occurring in 0.1–0.8% of implantations. Diagnosis is often delayed (median 9 days) due to nonspecific symptoms that mimic common post-procedural conditions, and up to 40% of patients are initially asymptomatic. We report a case in which hemorrhagic pleural effusion unmasked occult right atrial lead perforation.

Case Presentation

A 77-year-old woman with paroxysmal atrial fibrillation and myeloproliferative syndrome underwent dual-chamber pacemaker implantation for complete heart block following non-ST elevation myocardial infarction. She had recurrent admissions for chest pain, dyspnea, and atrial fibrillation, treated as pericarditis and pneumonia. Device interrogation suggested atrial lead dislodgement, and revision was planned. Her course was complicated by severe acute kidney injury due to colchicine-diltiazem interaction, requiring emergent hemodialysis. After dialysis catheter placement, she developed acute respiratory failure with a large right pleural effusion. Thoracentesis revealed hemorrhagic fluid. CT imaging demonstrated right atrial lead perforation through the myocardium and pericardium into the chest wall. Surgical repair resulted in resolution of the effusion and renal recovery.

Discussion

This case highlights the diagnostic challenge of lead perforation and anchoring bias. CT is the diagnostic modality of choice, with >97% sensitivity for extracardiac lead position, compared with ~41% for echocardiography. Persistent cardiopulmonary symptoms after pacemaker implantation, especially with lead parameter changes or hemorrhagic effusion, should prompt immediate cross-sectional imaging.

Conclusion

Pacemaker lead perforation is a dangerous masquerader. Hemorrhagic pleural or pericardial effusion after pacemaker implantation should prompt high suspicion for lead perforation to prevent life-threatening delays.

Submitted by Hanin Lataifeh, MD

Title: Delayed Onset Pacemaker Atrial Lead Perforation Presenting with Hemorrhagic Pleural Effusion and Respiratory Failure

Authors: Hanin Lataifeh, M.D., Tyler Young, M.D., Indira ojha, M.D., Saud Sarhan, M.D., Aro Daniela Arockiam, M.D., Eric Robinson, M.D.

Unity Health White County Medical Center

Introduction

Permanent pacemaker implantation is a commonly performed and generally safe procedure; however, serious complications may occur. Atrial lead perforation is an uncommon but potentially life-threatening complication that may present days to weeks after implantation. Clinical manifestations are often nonspecific, including chest pain, dyspnea, pericardial disease, or pleural effusions, which can delay diagnosis—particularly in patients with complex medical comorbidities.

Case Presentation

A 77-year-old woman presented with chest pain in the setting of a complex recent cardiac history, including nonobstructive coronary artery disease, complete heart block requiring permanent pacemaker implantation, pericarditis, and atrial fibrillation. She was subsequently admitted for pneumonia and acute kidney injury with progressive renal failure requiring dialysis. During hospitalization, she developed worsening chest pain and acute respiratory distress. Chest radiography revealed a large right-sided pleural effusion, and urgent thoracocentesis yielded hemorrhagic fluid. Computed tomography of the chest demonstrated perforation of the right atrial pacemaker lead through the myocardium and pericardium into the chest wall, with associated moderate right and small left hemorrhagic pleural effusions. The patient underwent urgent surgical lead extraction with subsequent clinical improvement.

Discussion

Delayed atrial lead perforation is a rare but serious pacemaker-related complication that can present with hemorrhagic pleural effusion and acute respiratory failure. Nonspecific symptoms and overlapping comorbidities may obscure the diagnosis. Computed tomography plays a critical role in identifying lead perforation and associated complications. Clinicians should maintain a high index of suspicion for device-related complications in pacemaker patients presenting with unexplained chest pain, respiratory distress, or hemorrhagic effusions.

Submitted by Hanin Lataifeh, MD

Title: The Double-Edged Sternotomy: Wire-Induced Aortic Injury Following Aortic Graft Procedure

Authors: Hanin Lataifeh, M.D.; Tyler Young, M.D., Aaron Inman, D.O., Saud Sarhan, M.D., Aro Daniela Arockiam, M.D., Kenneth Howell, M.D.

Unity Health White County Medical Center

Introduction
Postoperative complications following cardiac surgery can be life-threatening. Sternal dehiscence occurs in approximately 1–3% of patients and may predispose to rare but catastrophic injuries to adjacent intrathoracic structures. Aortic graft perforation secondary to sternal wire erosion is exceptionally uncommon, and guidance regarding prevention, early recognition, and management remains limited in the literature.

Case Presentation
A 57-year-old woman with hypertension, diabetes mellitus, and tobacco use underwent emergent surgical repair of a Stanford type A aortic dissection with ascending aortic graft placement. Her postoperative course was complicated by sternal dehiscence, for which she declined reconstructive surgery. Four years later, she presented with acute chest pain. Computed tomography of the chest revealed a displaced sternal wire penetrating the ascending aortic graft near the distal anastomosis. Emergent reoperation revealed fractured sternal wires, dense mediastinal fibrosis, and an organized thrombus overlying the graft. Removal of the thrombus resulted in torrential hemorrhage, necessitating emergent cardiopulmonary bypass and brief circulatory arrest. A 10 × 5 mm perforation of the aortic graft was repaired using pledgeted sutures. Due to severe sternal fragmentation, delayed closure with negative pressure wound therapy was performed. The patient recovered without further complications.

Discussion
This case illustrates a rare, delayed complication of chronic, untreated sternal dehiscence resulting in occult aortic graft injury from wire erosion. Symptoms may be nonspecific, leading to delayed diagnosis. Computed tomography is critical in identifying wire migration and graft involvement. Early recognition of sternal instability and timely surgical intervention are essential to prevent catastrophic hemorrhage and improve outcomes.

Submitted by Hanin Lataifeh, MD

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Beyond Thiamine: Acute Quadriparesis with Concurrent Vision Loss Secondary to Global Micronutrition Depletion in Alcohol Use Disorder

Background

Alcohol is a well-established contributor to various neurologic complications, which are often empirically treated with thiamine. However, neurological manifestations may result from depletions of other micronutrients, delayed recognition of which limits recovery from neurological deficits.

Objectives

We aim to illustrate early detection of multiple micronutrient depletions in alcohol use disorder promotes timely treatment and increases chance of neurological recovery.

Methods

We report the clinical course of a case with acute quadriparesis and vision loss secondary to global micronutrition deficiencies.

Results

The 38-year-old female with past medical history of alcohol use disorder was hospitalized for acute quadriparesis with concurrent acute vision loss, ileus, and urinary retention. Initial labs showed severe hypokalemia, lactic acidosis and anemia. Brain/spine imaging was unremarkable. Supplementation of potassium, thiamine and folate was initiated. Lactic acidosis quickly resolved with thiamine boosting pyruvate dehydrogenase activity. Despite mild albuminocytologic dissociation identified in CSF, neurologist favored nutritional neuropathy over Guillain-Barré syndrome. Labs later confirmed severe global deficiencies of thiamine, copper, zinc, folate, vitamin A and vitamin D. With supplementation of additional micronutrients, she demonstrated gradual improvement in muscle strength, recovery in vision, resolution of ileus and urinary retention, as well as increase in hemoglobin. Interestingly, follow-up genetic testing showed cystic fibrosis carrier status, which may have further contributed to micronutrient malabsorption.

Conclusions

This case underscores the importance of timely detection of multiple micronutrient deficiencies in alcohol use disorder, early recognition and treatment of which facilitate the recovery of potentially reversible neurological deficits.

Submitted by Huiping Shi, MD

Background: Atrial arrhythmias, especially atrial fibrillation, are common early post-lung transplantation. Late atrial tachycardias (AT) are uncommon because donor pulmonary veins (PV) are electrically and surgically separated from the native atrium.

Objective:
To describe a case of atrial tachycardias caused by a micro-reentrant circuit along a pulmonary vein anastomotic suture line following bilateral lung transplantation.

Results:
A 47-year-old male with a history of bilateral lung transplant for pulmonary fibrosis tw0 years ago presented with a symptomatic 2:1 tachycardia, unresponsive to adenosine. Electrocardiogram suggested a left-sided atrial tachycardia (AT). Cardiac magnetic resonance imaging demonstrated patent right and left pulmonary venous confluence. He was referred for electrophysiology study and ablation. Atrial tachycardia with a cycle length of 260 milliseconds was induced with atrial extra stimuli. The earliest atrial activation occurred at the mid-posterior left atrium (coronary sinus 3-4). Entrainment from this site demonstrated a post-pacing interval minus tachycardia cycle length of < 30 milliseconds consistent with involvement in the circuit. After trans-septal access, high-density voltage and activation mapping with a PentaRay catheter revealed scar along bilateral pulmonary veins and a micro-reentrant circuit along the suture line of the left inferior pulmonary vein. Radiofrequency ablation at 50 Watts at this site resulted in immediate slowing and eventual termination of the tachycardia.

Conclusion
Although, pulmonary veins. Anastomoses are typically protective against atrial fibrillation, surgical scarring or areas of reconnections can create substrate for macro- or micro-reentrant atrial tachycardias even years after transplantation. Careful mapping and entrainment can assist accurate diagnosis.

Submitted by Irfan Ahsan, MD

Background:
Leadless pacemakers (LP) provide an alternative to transvenous devices in patients at high infection risk or with vascular/anatomic limitations. Extremely obesity patients present challenges in implantation of either device.

Objective:
To describe procedural strategies enabling safe LP implantation in an extremely obese patient.

Methods:
A 59-year-old extremely obesity man (542 lbs., BMI 82) with chronic lymphedema presented with dyspnea and dizziness and was found to have paroxysmal symptomatic complete heart block. Laboratory evaluation and echocardiography were unremarkable. Given the paroxysmal heart block and potential challenges of implanting a transvenous device in an extremely obese patient, we decided to proceed with a LP.

Results:
The procedure was performed in a bariatric operating room under moderate sedation. After right femoral venous access and serial dilatations, a 27F introducer sheath was advanced to the RA. A Micra AV2 delivery system was positioned in the mid-right ventricle (RV). Given poor fluoroscopic penetrance and restricted C-arm mobility, a non-selective right ventriculogram in the right anterior oblique projection was performed to delineate RV anatomy: valve plane, apex, outflow tract. The delivery system was advanced to the high-mid septum while rotating clockwise. Device position was confirmed in a limited 10° left anterior oblique projection (limited by body habitus and patient position/rotation). After a satisfactory “gooseneck”, configuration, the Micra was deployed. Multiple tug tests confirmed fixation of 2 out of 4 tines. Final parameters were excellent (sensing 10.5 mV, impedance 750 ohms, threshold 0.75 V @ 0.24 ms), with appropriate P wave tracking in VDD (50-120bpm) mode.

Conclusion:
We present the first case within the Arkansas State of a successful LP implantation in an extremely obese patient (BMI >80). With careful procedural planning and contrast-guided anatomic delineation, we can overcome limitations due to body habitus, poor X-ray penetrance, and limited C-arm mobility.

Submitted by Irfan Ahsan, MD

A Case of Hypertensive Crisis After Marijuana Abuse

Authors:

Ishita Gupta, Baylee King, Paige Nappier, Mohamed Mraiyan, Laith Allaham

Introduction:

Marijuana is currently the most used illicit drug around the world. Its active ingredient of cannabis, is known to increase sympathetic stimulation leading to effects like tachycardia and anxiety. High systolic and diastolic blood pressures are known to occur after marijuana use. However, little data is reported on hypertensive emergencies occurring after abuse of marijuana in patients. We present a case of our patient who was admitted to the intensive care unit for hypertensive crisis.

Case Report:

A 54-year-old gentleman with a past medical history of type 2 diabetes, hypertension and CKD had presented to the emergency department because of symptoms consistent with hypoglycemia. The patient also had complaints of loss of vision and on admission the patient was also found to have hypertensive emergency. The patient was started on nicardipine drip and was closely monitored in the intensive care unit. The urine drug screen was positive for marijuana. Increased blood pressure readings despite nicardipine drip were noted for 24 to 48 hours after admission. Dronabinol was started on day 2 of admission. Oral antihypertensive medications were started and on day 3 of admission the patient was able to be weaned off of nicardipine drip. The patient was eventually discharged home with a new regime for hypertension along with counseling for smoking cessation.

Discussion and Conclusion:

Our case brings forth an important consideration for clinicians and trainees. Hypertensive crisis is a common pathology seen on inpatient wards and identifying a cause may be useful in preventing further episodes, thereby reducing mortality and morbidity. A very recent study published by Miro et al in 2026 analysed that in patients with cannabis use, the odds ratio of hypertensive crisis was 1.168 and this number was statistically significant.

Submitted by Ishita Gupta, MD

Multiple drug use and risk of falls in elderly patients with Type 2 Diabetes mellitus : A Systematic Review of Existing Literature

Background:

In the older population, type 2 diabetes mellitus (T2DM) is increasing, which is associated with its own complications, requiring polypharmacy. This predisposes the elderly patient to multiple adverse effects, one of which is an increased risk of falls.

Objectives:

To identify risk factors for falls in elderly population with T2DM and to analyze the role of polypharmacy.

Methods:

Databases such as PubMed, Google Scholar, Scopus, and ScienceDirect were searched using relevant keywords and MeSH terms. We included original articles from 2013-2025, which included people aged ≥65, diagnosed with T2DM, on multiple drugs, and a documented history of falls. PRISMA guidelines were followed.

Results:

We identified three relevant studies following screening, which were conducted in geriatric populations. In a single-center cross sectional study conducted in Malaysia, out of 400 patients, 138 diabetic patients out of 154 patients were on multiple drugs, associated with higher risk of Medications associated with Geriatric Syndromes (MAGs). An observational study conducted in Japan among patients with non-valvular atrial fibrillation (NVAF) found that 77.29% of patients with diabetes mellitus were using multiple drugs. An observational case-control study conducted in Turkey reported that polypharmacy increased the risk of falls.

Conclusion:

Medication risk is the most modifiable factor to decrease fall risk. A comprehensive clinical approach is required to reduce the need for multidrug regimens. The lack of quantitative data urges the need for more multicenter randomized controlled trials or comparative studies regarding this.

Submitted by Ishita Gupta, MD

PREDICTION OF 1-YEAR MAJOR ADVERSE CARDIAC EVENTS IN CAR-T RECIPIENTS USING RISK SCORE MODELING: EXPANDED WHOLE-COHORT ANALYSIS

Authors:

[1]J. Curran Henson, MD, MS; [2]Garrett Spears, BS; [2]Brett Daughdrill, BS; [3]Sruthi Vellanki, BS; [3]Anup Kumar Trikannad, MD; [4]Cesar Gentille Sanchez, MD; [5]Srikanth Vallurupalli MD

Affiliations:

[1]University of Arkansas for Medical Sciences, Department of Internal Medicine [2]University of Arkansas for Medical Sciences, College of Medicine [3]University of Arkansas for Medical Sciences, Division of Hematology and Oncology [4]University of Arkansas for Medical Sciences, Myeloma Institute [5]University of Arkansas for Medical Sciences, Division of Cardiology

Background: Chimeric antigen receptor T-cell (CAR-T) therapy is complicated by cardiovascular toxicity, but strategies to predict major adverse cardiac events (MACE) remain undefined.

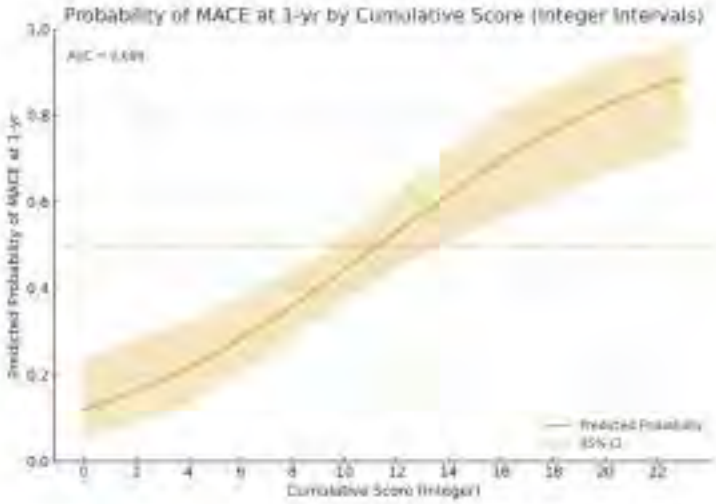
Methods: We retrospectively studied 187 CAR-T recipients (median age 66) treated between December 2019 and February 2025. MACE included new-onset/recurrent arrhythmia, heart failure, myocardial infarction, or stroke within 1 year; no patients experienced cardiac death. Logistic regression generated cumulative risk scores; model calibration, ROC analysis, and diagnostic thresholds were evaluated.

Results: Each 1-point score increase was associated with a 19% higher odds of 1-year MACE (OR 1.193, 95% CI 1.102-1.291, $p<0.0001$). The model showed significant discrimination (AUC 0.689, 95% CI 0.612-0.765, $p<0.0001$). Predicted probabilities rose from <10% at low scores to >70-80% at high scores, with clinically meaningful risk separation. Threshold analyses showed trade-offs: score ≤5 achieved 94% sensitivity, while ≥13 provided 90% specificity (PPV 69%, NPV 62%).

Conclusion: In 187 CAR-T recipients, risk modeling stratified 1-year MACE with good calibration and clinically actionable thresholds. This supports risk score-based prediction as a scalable surveillance strategy for cardiovascular outcomes after CAR-T therapy, independent of echocardiography.

Submitted by J. Curran Henson, MD

Source	Value	Standard error	Wald Chi-Square	Pr > Chi²	Wald Lower bound (95%)	Wald Upper bound (95%)	Odds Ratio	Odds ratio Lower bound (95%)	Odds ratio Upper bound (95%)
Intercept	-1.990	0.426	21.819	<0.0001	-2.825	-1.155			
Cumulative Score	0.176	0.040	19.087	**<0.0001**	0.097	0.256	**1.193**	1.102	1.291



Submitted by J. Curran Henson, MD

A Quality Improvement Project to Improve HPV Vaccine Education at Preadolescent Well Visits in a Pediatric Primary Care Clinic

Kate Childers, MD[1,2], Maliha Anwar, DO[1,2], Neal, Annmarie, BSN, RN[1], Sisterhen, Laura, MD, MPH[1,2]

1 Arkansas Children's Hospital, Little Rock, AR

2 Department of Pediatrics, University of Arkansas for Medical Sciences, Little Rock, AR

Background

Human papillomavirus (HPV) vaccination is recommended beginning at age 9 years, yet vaccination uptake remains suboptimal. Provider recommendations and education are key drivers of vaccine acceptance, but documentation of HPV vaccine education during preadolescent well-child visits is often inconsistent. At our primary care resident clinic, baseline documentation of HPV vaccine education was low, limiting our ability to ensure consistent counseling and evaluate improvement efforts.

Objectives

To increase HPV education during well-child visits for children aged 9-11 years in a resident-led pediatric primary care clinic.

Methods

This quality improvement project followed the Model for Improvement framework using multiple Plan-Do-Study-Act (PDSA) cycles between June 2025 and March 2026 and is currently ongoing. The setting was a resident-led primary care clinic within an academic children's hospital. Interventions included resident e-mail reminders, resident education sessions, HPV education flyers added to the electronic health record (EHR), EHR auto-assignment of HPV education material, printed handouts in workrooms, and ongoing feedback through weekly run chart reviews. Documentation of HPV vaccine education was measured through weekly EHR chart reviews of all well-child visits for patients aged 9-11 years.

Results

Documentation of HPV vaccine education increased by 71% from baseline, with data points demonstrating consistent upward trends and sustained improvement over time. The most effective intervention was EHR auto-assignment of HPV education materials, while passive strategies such as education sessions and email reminders had limited impact. Workflow disruptions related to frequent resident rotation changes were identified as a key barrier, underscoring the importance of embedding interventions directly into the EHR.

Submitted by Katelyn Childers, MD

Conclusions

Standardizing HPV vaccine education through EHR-based workflows significantly improved documentation during preadolescent well-child visits in a resident-led clinic. System-level interventions were more effective and sustainable than education alone. Future work will focus on spreading this intervention to additional clinics and evaluating its impact on HPV vaccination rates.

Submitted by Katelyn Childers, MD

An Interesting Case of a Female Phenotypic Carrier of DMD: A Rare but Consequential Entity

Kamaria R. Coleman, MD, MBS, Vikki Stefans, MD
Division of Physical Medicine and Rehabilitation, University of Arkansas for Medical Sciences, Little Rock, AR

ABSTRACT

52 year old female presents to the adult dystrophy clinic to establish care. She reports having a son that is diagnosed with Duchenne Muscular Dystrophy.

Assessment/Results

Upon evaluation, she reports having prior genetic testing that shows evidence of the gene associated with Duchenne's Muscular Dystrophy. She has muscle wasting throughout, calf pseudohypertrophy, significant cardiac issues and has been on the heart transplant list. She also had multiple cataract revisions and several complications of diabetes mellitus. Lastly, she reports having a father that passed away from complications of heart failure and that lost the ability to walk independently years before his demise.

Discussion (relevance)

While female carriers of Duchenne's Muscular Dystrophy, are thought to be a rare entity and there has classically been the ideology that females are not affected by this dystrophinopathy. We assert that further screening be completed for the mother's of sons with Duchenne's Muscular Dystrophy especially those that are phenotypic carriers as they can manifest complications thought to be isolated to those affected with Duchenne's Muscular Dystrophy.

Conclusions

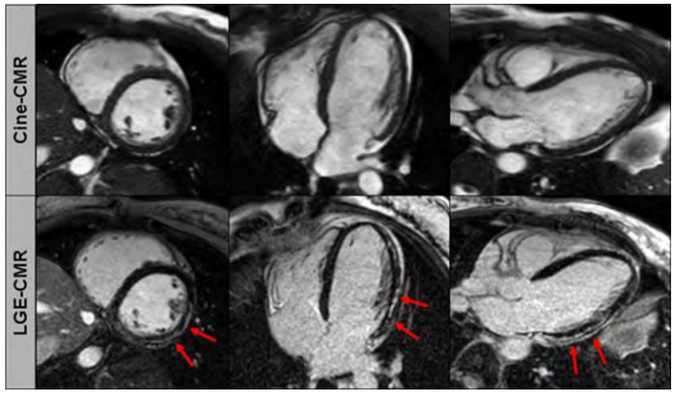
Phenotypic female carriers of son's with Duchenne's Muscular Dystrophy should undergo screenings to identify possible complications originally thought to only affect individuals diagnosed with Duchenne's Muscular Dystrophy.

BACKGROUND

Female carriers of muscular dystrophy are under recognized. These carriers can have physical signs of muscular dystrophy and depending on the cause of the male affected carrier, female carriers can even be severely affected. Additionally, female carriers of muscular dystrophies can develop dilated cardiomyopathy and should establish with a cardiologist.

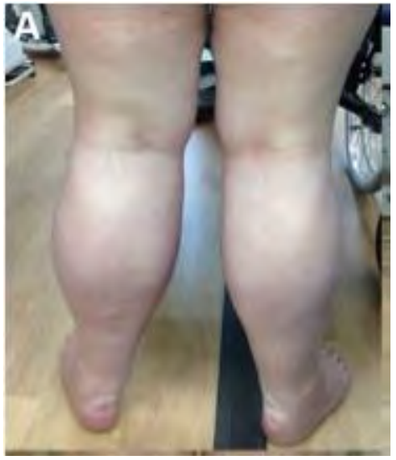
ASSESMENT/RESULTS

Upon evaluation, she reports having prior genetic testing that shows evidence of the gene associated with Duchenne's Muscular Dystrophy. She has muscle wasting throughout, calf pseudohypertrophy, significant cardiac issues and has been on the heart transplant list. She also had multiple cataract revisions and several complications of diabetes mellitus. Lastly, she reports having a father that passed away from complications of heart failure and that lost the ability to walk independently years before his demise.



DISCUSSION

While female carriers of Duchenne's Muscular Dystrophy, are thought to be a rare entity and there has classically been the ideology that females are not affected by this dystrophinopathy. We assert that further screening be completed for the mother's of sons with Duchenne's Muscular Dystrophy especially those that are phenotypic carriers as they can manifest complications thought to be isolated to those affected with Duchenne's Muscular Dystrophy.



CONCLUSIONS

Phenotypic female carriers of son's with Duchenne's Muscular Dystrophy should undergo screenings to identify possible complications originally thought to only affect individuals diagnosed with Duchenne's Muscular Dystrophy.

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ACKNOWLEDGEMENTS

Thank you to the UAMS Division of Physical Medicine and Rehabilitation for supporting this project.

Abstract

Improving the Diabetes Care Pathway in an Academic Family Medicine Clinic

Gangar Komal MD, Foster Stephen MD, Sakariya Geeta MD, Gibson-Oliver Lauren MD, MBA, FAAFP

Background:

Type 2 diabetes (T2D) accounts for approximately 90% of all diabetes cases globally and is associated with significant complications and healthcare costs. Timely, coordinated care is critical for improving outcomes in patients with poorly controlled T2D (HbA1c > 9). However, care delivery is often inconsistent due to variable social determinants of health and inconsistency in care co-ordination.

Objective:

This quality improvement (QI) project aims to streamline the referral and enrollment process for patients with poorly controlled diabetes at an academic Family Medicine Clinic (FMC) by enhancing care coordination and increasing provider engagement.

Methods:

A pilot intervention will implement educational sessions for physicians and residents to improve awareness and utilization. To reduce factors that have been perceived to affect the referral rate will be improved by targeted electronic and visual reminders in clinic. Electronic Medical Record System EPIC will be updated to include care pathway referrals in the Care Plans with appropriate prompts. Care managers will proactively engage patients using a structured queue system, ensuring follow-up and integration of services, including pharmacy and diabetes education.

Implementation:

The project is being executed in phases, stating with presurvey. Followed by beginning with system updates, staff education, and Flyers. Data will be collected on referral rates, follow-up appointments, HbA1c levels, and stakeholder feedback

Anticipated Results:

We expect increased identification and referral of patients with poorly controlled

Submitted by Komal Gangar, MD

diabetes, improved patient engagement in diabetes education, and a reduction in HbA1c levels. Stakeholders are expected to report improved workflow efficiency and satisfaction.

Conclusion:

By improving education and consistent reminders for the referral process, this QI initiative aims to improve diabetes management and outcomes in a sustainable manner, creating a model for enhanced chronic disease care in primary care settings.

Submitted by Komal Gangar, MD

Authors: Gangar, K., Sockwell, L., & Martel, I

Purpose

To examine associations between health literacy, measured by the Newest Vital Sign (NVS), and HIV risk behaviors among adults receiving substance use disorder (SUD) treatment. We aim to determine whether lower health literacy predicts higher HIV risk, and poorer health outcomes at follow-up, to inform targeted interventions.

Methods

This retrospective study uses existing clinical and screening data from an outpatient SUD treatment center in Arkansas. Inclusion criteria: adults (≥18 years) with documented NVS score, HIV testing, and HIV risk behavior screening. Key variables include NVS score (0–6), HIV risk behaviors, HIV education exposure, follow-up attendance, and sociodemographic factors (age, sex, race/ethnicity, education, housing). Analyses will use multivariable regression models to assess associations between NVS and HIV risk scores, health outcomes at follow-up, and HIV education knowledge scores, adjusting for substance severity and social determinants of health.

Results

Data extraction and cleaning are in progress. Preliminary descriptive statistics will summarize NVS distribution, HIV risk behaviors, and care/engagement outcomes. Planned analyses include multiple regression for HIV risk as the primary outcome. HIV knowledge improvement scores will be tested for mediation effects, and SDOH will be explored as potential modifiers.

Conclusions

This study will clarify whether limited health literacy is linked to higher HIV risk and poorer care engagement among SUD patients, and the effect of HIV education and other SDOH on that relationship. Findings will guide tailored education and case management strategies to improve HIV prevention and retention in care.

Learning Objectives

1. Describe the relationship between health literacy and HIV risk behaviors among patients in substance use disorder treatment.
2. Identify key sociodemographic and clinical factors that may influence care engagement and retention in this population.
3. Discuss strategies for using health literacy assessments to inform targeted interventions among complex populations.

Submitted by Komal Gangar, MD

“What went where?” Bilateral Breast Metastases from Anal Squamous Cell Carcinoma

Kyle Jackson MD, Michael Bunyard MS4, Patrick Jennings MD, Joshua Eichhorn MD, Rachel Taylor MD
Department of Radiology, University of Arkansas for Medical Sciences, Little Rock, AR

Clinical Information

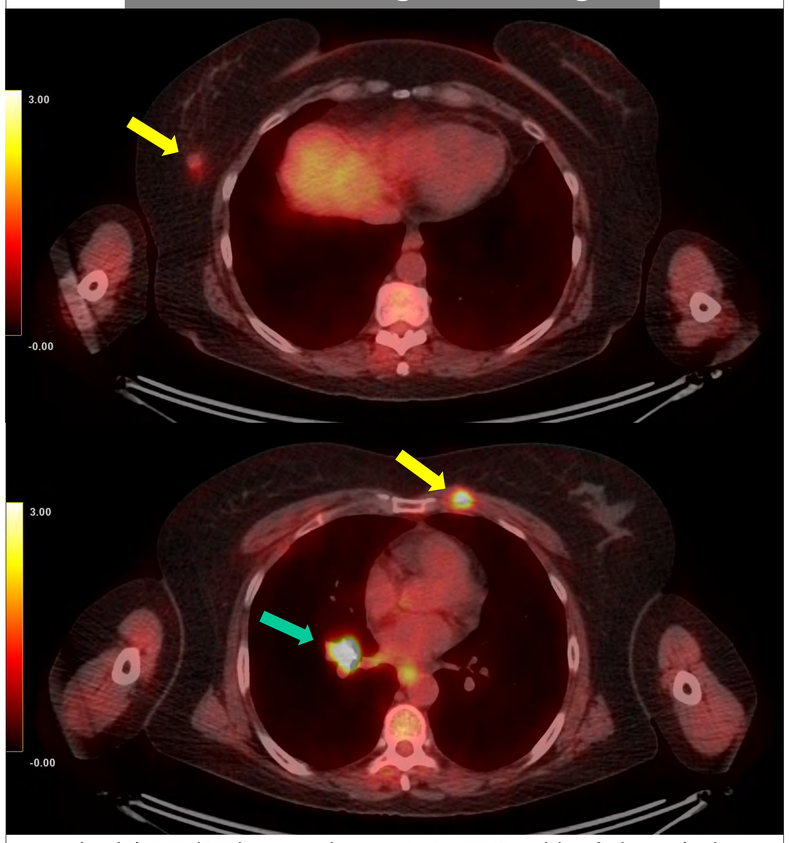
59 y/o Female with longstanding history of high grade Vulvar and perianal intraepithelial neoplasia s/p vulvectomies, anal lesion excisions, and topical Imiquimod.

In 2022 she felt a new raised perianal nodular area. This was biopsied and resulted as “Invasive keratinizing squamous cell carcinoma, arising in a background of HSIL (AIN3).”
Imaging staged her as Stage IIIA(cT1, cN1a, cM0). She then underwent chemoradiation with Capecitabine, mitomycin C, and 50 Gy in 30 fractions.

2024 PET/CT showed diffuse metastatic disease involving lungs and retroperitoneal lymph nodes. The patient underwent further chemotherapy.

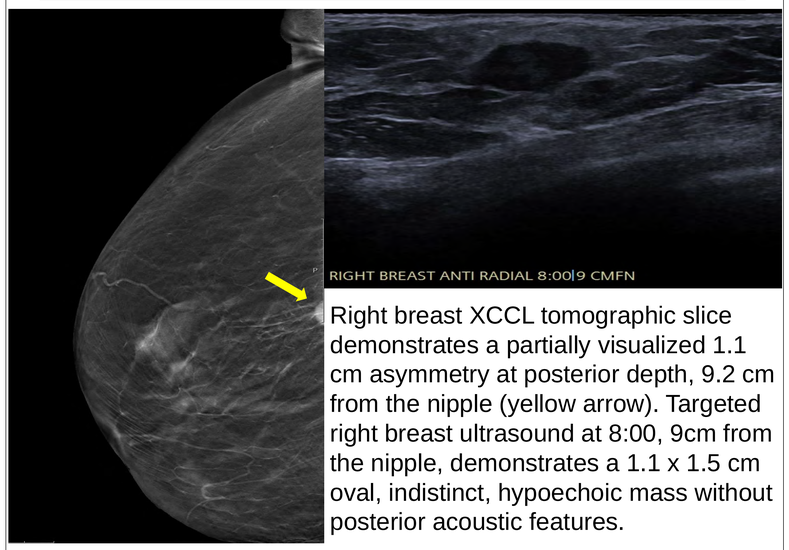
2025 PET/CT showed further disease progression with new lesions in the breasts.

PET/CT Image Findings

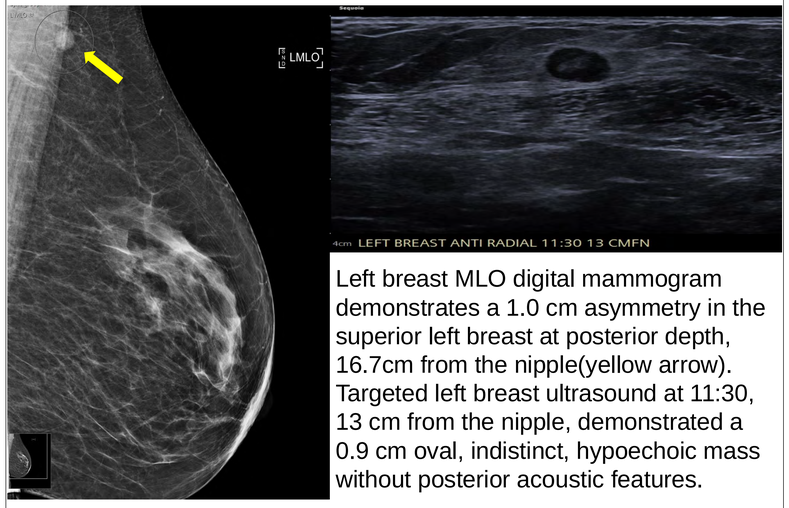


Fused axial PET/CT images demonstrate FDG-avid soft tissue lesions within the right breast and left breast/pectoralis region (yellow arrows). An FDG-avid right hilar lymph node (green arrow) was also identified, consistent with disease progression and nodal metastatic involvement.

Mammographic/US Image Findings



Right breast XCCL tomographic slice demonstrates a partially visualized 1.1 cm asymmetry at posterior depth, 9.2 cm from the nipple (yellow arrow). Targeted right breast ultrasound at 8:00, 9cm from the nipple, demonstrates a 1.1 x 1.5 cm oval, indistinct, hypoechoic mass without posterior acoustic features.



Left breast MLO digital mammogram demonstrates a 1.0 cm asymmetry in the superior left breast at posterior depth, 16.7cm from the nipple(yellow arrow). Targeted left breast ultrasound at 11:30, 13 cm from the nipple, demonstrated a 0.9 cm oval, indistinct, hypoechoic mass without posterior acoustic features.

Results

The right breast mass was felt to correlate with the right breast FDG-avid lesion on PET/CT, however the left breast mass was not felt to correlate with the left breast/pectoralis FDG-avid region.

The above breast masses were then targeted by ultrasound-guided biopsy.

Pathology for both masses resulted as: Metastatic squamous cell carcinoma, keratinizing, moderately to poorly differentiated.

Discussion

Extramammary metastasis to the breast is rare, comprising only 1-2% of malignancy within the breast.

The most common primary sites to metastasize to the breast are (in order of declining frequency): malignant melanoma, lymphoma, lung cancer, ovarian carcinoma, soft tissue sarcoma, and gastrointestinal and genitourinary tumors.

Metastatic osteosarcoma, thyroid, cervical, vaginal and endometrial carcinomas to the breast have been sporadically reported in the literature. However, no discrete case of anal squamous cell carcinoma (SCC) breast metastasis was found on literature review.

Anal SCC metastatic progression following primary treatment is seen in only 10–20% of cases, with the most common sites being: liver, lung, and extra pelvic lymph nodes. Patients with metastatic disease have a 18% overall 5-year survival rate.

Extramammary metastasis most commonly presents as multiple or solitary, round or oval, circumscribed masses of either equal or high density on mammography. Ultrasound typically demonstrates a hypoechoic mass, oval or round in shape, with microlobulated or circumscribed margins. These findings are consistent to what was observed in this case.

Diffuse metastatic disease and bilateral masses support the presumption that breast findings may be extramammary metastasis in etiology. However, with metastasis to the breast being rare, biopsy of new breast masses is recommended to exclude a metachronous primary breast malignancy.

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When Heparin-Induced Thrombocytopenia Strikes Without Warning: A Rare Case in a Heparin-Naïve Cancer Patient

Khiem Phan, M.D., Tyler Young, M.D.*, Saud F. Sarhan, M.D., Ruba Abu Alhuda, M.D., Jyoti Chaudhary, M.D., David E. Martin, Ph.D.

Unity Health-White County Medical Center, Searcy, Arkansas, USA

Abstract

Heparin-Induced Thrombocytopenia (HIT) without prior heparin exposure, known as spontaneous or autoimmune HIT, is a rare but serious immune-mediated condition. It occurs when anti-platelet factor 4 (PF4) antibodies bind to non-heparin polyanions, such as bacterial walls, DNA, or tumor cell membranes, forming complexes that trigger antibody production and platelet activation.

Case report: We present a case of an 80-year-old male who presented with bright red rectal bleeding. Initial labs revealed hemoglobin 11.0 g/dL and platelets 82 $\times 10^9$/L. Despite supportive care, he developed hypotension and progressive anemia. Extensive endoscopic evaluation revealed no active bleeding source, and gastrointestinal biopsies were negative for malignancy. Hematology consultation revealed positive heparin-induced platelet antibodies, confirming HIT despite no heparin exposure. Imaging revealed pulmonary infiltrates and mediastinal masses, and bone marrow biopsy confirmed metastatic small cell carcinoma. His platelet count declined to 9×10^9/L, and his hemoglobin fluctuated between 7.5–11.0 g/dL despite transfusions. Due to clinical deterioration, comfort care was initiated.

Summary: This case highlights the diagnostic challenge of spontaneous HIT in cancer patients, where thrombocytopenia is often attributed to malignancy or chemotherapy. Recognition requires clinical suspicion and confirmatory testing. Management involves immediate discontinuation of all heparin products and initiation of non-heparin anticoagulants, while avoiding warfarin during acute HIT.

Submitted by Khiem Phan, MD

Breaking Point: Malignancy-Associated Hypercalcemia and a Destructive Femoral Lytic Lesion in a Patient with End-Stage Renal Disease

Khiem Phan, M.D.*, Saud F. Sarhan, M.D., Tyler J. Young, M.D., Alexandra Young, M.D., Zainab Naqvi, M.D., Ahmad Al Kharabsheh, M.D., Imran Khalid, M.D., Ana Rodriguez, M.D., Seth Sturgill, D.O., Riley Tuma, M.D., David Alexander, M.D., Gregory Mock, M.D., David E. Martin, Ph.D.

Unity Health White County Medical Center, Searcy, Arkansas, USA

Abstract

Introduction

Hypercalcemia of malignancy is a potentially life-threatening cause of metabolic encephalopathy and is associated with poor prognosis, particularly in elderly patients with end-stage renal disease (ESRD), where both diagnostic evaluation and therapeutic interventions are limited.

Case Presentation

An 86-year-old man with a history of myocardial infarction, hypothyroidism, hypertension, end-stage renal disease (ESRD), and prostate cancer in remission presented with abnormal outpatient laboratory results, acute altered mental status, and worsening left hip pain. Nephrology evaluation revealed a creatinine of 5.9 mg/dL and total calcium of 12.4 mg/dL. Hospital laboratory studies showed macrocytic anemia, serum calcium 12.8 mg/dL, ionized calcium 1.50 mmol/L, suppressed intact parathyroid hormone at 26.3 pg/mL, and elevated parathyroid hormone–related peptide at 3.0 pmol/L. Other labs and markers were within normal limits. Nephrology was consulted due to the patient's ESRD. Radiographs and computed tomography revealed lytic bone destruction of the left proximal femur, raising suspicion for a neoplastic process. Magnetic resonance imaging was not performed due to poor renal function. Body nuclear bone scintigraphy demonstrated an approximately 13-cm hypermetabolic lesion in the left proximal femur, consistent with malignancy. Orthopedic surgery was consulted for potential surgical intervention. Despite appropriate medical management, hypercalcemia persisted, and encephalopathy worsened. Following multidisciplinary discussions, the family elected to pursue comfort-focused care.

Discussion

This case underscores the diagnostic and therapeutic challenges of malignancy-associated hypercalcemia with skeletal involvement in patients with ESRD. Early multidisciplinary collaboration and timely palliative care discussions are essential to optimize quality of life during the final stages of illness.

Submitted by Khiem Phan, MD

When Silence Can Be Dangerous: Recurrent Profound Hyponatremia Secondary to SIADH and the Therapeutic Role of Tolvaptan

Khiem Phan, M.D.*, Saud F. Sarhan, M.D., Tyler J. Young, M.D., Alexandra Young, M.D., Zainab Naqvi, M.D., Ahmad Al Kharabsheh, M.D., Imran Khalid, M.D., Ana Rodriguez, M.D., Seth Sturgill, D.O., Riley Tuma, M.D., David Alexander, M.D., Gregory Mock, M.D., David E. Martin, Ph.D.

Unity Health White County Medical Center, Searcy, Arkansas, USA

Abstract

Introduction

Syndrome of inappropriate antidiuretic hormone secretion (SIADH) can cause euvolemic hyponatremia, especially in patients with head and neck malignancy and surgeries or post-thyroidectomy histories. This condition increases the therapeutic challenge and recurrent hospitalizations.

Case Presentation

A 70-year-old patient with a history of total laryngectomy secondary to laryngeal squamous cell carcinoma, partial pharyngectomy, and papillary thyroid carcinoma status post thyroidectomy, presented to the emergency department with acute chest pain, nausea, and vomiting. Cardiac markers were negative for acute coronary disease, while her serum sodium was 116 mmol/L and a serum osmolality of 246 mOsm/kg, urine osmolality 670 mOsm/kg, urine sodium of 38 mmol/L, and serum uric acid of 2.4 mg/dL. The patient was admitted to the intensive care unit for severe hyponatremia. She was managed with fluid restriction, oral urea 15 g daily, and a 100-mL bolus of 3% hypertonic saline. Basic metabolic panels (BMPs) were monitored every three hours. Urine studies confirmed the diagnosis of SIADH. She received tolvaptan at 7.5 mg once, resulting in rapid and sustained correction of serum sodium to 134 mmol/L without neurologic complications. She was discharged with stable sodium levels and experienced several admissions for recurrent hyponatremia with serum sodium of 120s mmol/L, each time responding well to tolvaptan.

Discussion

This case emphasizes the clinical challenge of managing recurrent severe SIADH in patients with head and neck malignancy. It demonstrates that low-dose tolvaptan may serve as an effective therapeutic choice for refractory SIADH. However, the cost of tolvaptan could be a barrier for outpatient settings.

Submitted by Khiem Phan, MD

Treatment Patterns for GERD in Arkansas: A Retrospective Real-world Study from the State's Largest Health Care System

Lina AlQirem[1], Adal Guzman[1]

[1]The University of Arkansas for Medical Sciences, Little Rock, AR

Background:
Gastroesophageal reflux disease (GERD) is a highly prevalent chronic condition most commonly managed with medical therapy, while surgical intervention is reserved for select patients. Real-world data describing GERD treatment patterns at the state level are limited.

Objectives:
To characterize real-world treatment patterns for GERD in Arkansas, focusing on medical therapy with proton pump inhibitors (PPIs) and H2 receptor antagonists versus surgical treatment with fundoplication within the state's largest healthcare system.

Methods:
We conducted a retrospective cohort study using the TriNetX research network from the University of Arkansas for Medical Sciences (UAMS). Adult patients (≥18 years) with a diagnosis of GERD (ICD-10 K21) were identified. Outcomes included use of PPIs (omeprazole, pantoprazole, esomeprazole, lansoprazole, dexlansoprazole, rabeprazole), H2 receptor antagonists (famotidine, ranitidine, cimetidine, nizatidine), and fundoplication procedures. Risk analyses excluded patients with prior exposure before the index event.

Results:
The cohort included 98,820 patients with GERD. Medical therapy was the predominant treatment modality. PPIs were frequently prescribed, with pantoprazole (29.0%) and omeprazole (16.9%) being the most commonly used agents. H2 receptor antagonists were also widely utilized, particularly famotidine (20.6%) and ranitidine (6.9%). In contrast, surgical management was rare; only 170 patients (0.2%) underwent fundoplication following GERD diagnosis.

Conclusions:
In this large real-world Arkansas cohort, GERD management overwhelmingly relied on medical therapy, particularly PPIs, while surgical intervention with fundoplication was uncommon. These findings highlight real-world treatment preferences and may inform future studies evaluating long-term outcomes and optimization of GERD management strategies.

Submitted by Lina AlQirem, MD

Incidence of Microscopic Colitis Among Proton Pump Inhibitor Users in Arkansas: A TriNetX Analysis from an Academic Health System

Lina AlQirem[1], Adal Guzman[1]

[1]The University of Arkansas for Medical Sciences, Little Rock, AR

Background:
Microscopic colitis is an important cause of chronic watery diarrhea and is frequently diagnosed in older adults. Several medications, including proton pump inhibitors (PPIs), have been implicated as potential risk factors; however, existing studies have yielded conflicting results, and real-world population-level data remain limited.

Objectives:
To assess the incidence of microscopic colitis among patients exposed to PPIs within the University of Arkansas for Medical Sciences (UAMS) healthcare system.

Methods:
We conducted a retrospective cohort study using the TriNetX federated research network restricted to UAMS. Adult patients with documented exposure to PPIs were included, with the first recorded PPI prescription serving as the index event. Microscopic colitis was identified using ICD-10-CM codes K52.83 and K52.839 beginning one day after the index event. Patients with prior microscopic colitis were excluded. Risk, Kaplan–Meier survival, and number-of-instances analyses were performed.

Results:
A total of 175,680 PPI-exposed patients were identified. During follow-up, 120 patients developed microscopic colitis, corresponding to a cumulative incidence of 0.1%. Kaplan–Meier analysis demonstrated a 99.85% probability of remaining free from microscopic colitis at the end of follow-up, with median survival not reached. Among affected patients, the mean number of diagnostic instances was 3.1, with a median of 2.

Conclusions:
In this large real-world Arkansas cohort, microscopic colitis following PPI exposure was rare. These findings help characterize treatment-related outcome patterns within the Arkansas population and suggest that concern for microscopic colitis alone should not preclude appropriate PPI use. Future comparative studies may further clarify patient-specific risk factors.

Submitted by Lina AlQirem, MD

QI Project title

Increasing CGM Utilization Among Patients on Long-Term Insulin Therapy

Project Aim (SMART)

By Month 6, increase the percentage of long-term insulin users in our clinic who are using CGM from 15% to 45 % and improve CGM adherence (≥70% active wear time) among those using it.

🧠 Background / Rationale

Continuous glucose monitors (CGMs) provide real-time glucose data, improve glycemic control (HbA1c), decrease hypoglycemia, and enhance patient quality of life for people on long-term insulin therapy. Despite these benefits, CGM utilization often remains low due to barriers including cost, lack of awareness, insurance coverage or provider hesitation.

QI Team

Dr. Peela

Dr. Brown

Diabetes Educator- ? Tonya

One clinic nurse willing to help

IT person to help us pull EMR data

Dr. Berhanu

Dr. Cunningham

Dr. Egbuna

Dr. Nartey

Submitted by Mefthe Berhanu, MD

Team Roles:

- Project lead
- Data collection & analytics
- Provider education champion
- Patient education & support

2. Define the Population

Eligibility criteria:

- Adults (≥18 years)
- On **long-term insulin therapy** (≥6 months)
- At least 1 clinic visit in past 12 months

Exclusions:

- Type 1 vs Type 2 differentiation if needed
- Pregnancy
- End-of-life care

---

3. Establish Baseline Metrics (Pre-Intervention Data)

Collect and report baseline data over prior 3–6 months:

📌 **Primary measure:**

- % of eligible patients currently using CGM

📌 **Secondary measures:**

- % with documented CGM indication (e.g., frequent hypoglycemia)

Submitted by Mefthe Berhanu, MD

- Avg HbA1c among CGM vs non-CGM users
- Clinic visit documentation on CGM discussion

📌 **Balancing measures:**

- Patient satisfaction
- Reported barriers to CGM
- Device cost/insurance approval success rate

---

4. Data Collection Plan

Data Sources:

- EMR reports (insulin prescriptions + CGM device orders)
- Patient reported usage (diary / portal questionnaires)

Data Frequency:

- Weekly chart pulls

5. Identify Barriers & Root Causes

- **Provider & patient surveys**

Possible barriers:

- Insurance coverage confusion
- Lack of provider comfort prescribing CGM
- Patient tech concerns
- Clinic workflow issues

🟡 **PDSA Cycle 4 — Insurance Navigation Support**

Plan: Streamline prior authorization process w/ dedicated staff.
Do: Create template PA forms and coverage checklists.

Submitted by Mefthe Berhanu, MD

Study: Track approval rates and turnaround time.
Act: Adjust workflow or advocate with payers if needed.

---

7. Outcome Evaluation

At defined intervals (e.g., Month 3 & Month 6), reassess:

📊 **Primary outcomes**

- % of long-term insulin users using CGM

📊 **Secondary outcomes**

- HbA1c improvement
- Reduced hypoglycemic episodes
- Patient satisfaction
- Provider uptake

Present results in run charts to show trends over time.

SAMPLE TABLE

Measure Type	Metric	Goal
Process	% of eligible patients screened for CGM	>85%
Outcome	% using CGM	Increase **X% → Y%**
Clinical	Mean HbA1c change	↓ ≥0.5%
Balancing	Patient satisfaction	≥80% positive

Submitted by Mefthe Berhanu, MD

- **6. Interventions (Plan–Do–Study–Act Cycles)**
- ---
- 🟡 **PDSA Cycle 1 — Provider Education**
- **Plan:** Train providers on CGM indications, documentation, and insurance pathways.
  Do: Conduct 2 workshops + distribute quick checklists.
  Study: Assess provider knowledge + number of CGM prescriptions written.
  Act: Refine training based on feedback.
- ---
- 🟡 **PDSA Cycle 2 — Clinic Workflow Optimization**
- **Plan:** Add CGM status field in EMR and monthly diabetes population report.
  Do: Implement EMR flag & automated reminder.
  Study: Check completeness of CGM status field.
  Act: Update prompts or alerts as needed.
- ---
- 🟡 **PDSA Cycle 3 — Patient Education & Support**
- **Plan:** Provide CGM info sheets + group education sessions.
  Do: Host education session during diabetes class + offer 1:1 diabetes educator visits.
  Study: Measure attendance and follow-up uptake.
  Act: Expand session schedule or format.

Submitted by Mefthe Berhanu, MD

Real-world experience of the Multielectrode Spherical Array Catheter using Zero Fluoroscopy Approach.

Mohamed Mraiyan, MD, Brandon Doty, DO, Devi Nair, MD, FACC, FHRS

Background

The Globe Pulsed Field System is a novel single-shot, 122-electrode spherical array catheter that integrates high-density mapping and pulsed field ablation (PFA) for the treatment of atrial fibrillation (AF). In the multicenter PULSAR IDE trial (NCT05462145), the system demonstrated reduced procedural complexity (mean 1.2 PFA applications per vein) while achieving efficient pulmonary vein isolation (PVI), with 100% acute success and 78% arrhythmia-free survival at one year.

We aim to evaluate the procedural safety, performance, adaptability, and real-world utilization of the multielectrode spherical array catheter in patients with paroxysmal and persistent AF.

Results

Acute isolation was achieved in 100% of targeted pulmonary veins and posterior wall lesions, with an average of 7.2 +/- 2.6 PFA applications. Additional lesion sets performed in this real-world experience included mitral isthmus and cavo-tricuspid isthmus ablation. The system's ability to rapidly alternate between mapping and ablation enabled immediate confirmation of acute lesion durability without catheter exchange. Mean left atrial dwell time was 34 +/- 12 minutes, with markedly reduced catheter manipulation and fluoroscopy use of 0 minutes compared to 9.2 +- 7.5 min in Pulsar IDE pivotal trial. No major complications occurred, such as device-related perforation, coronary spasm, hemolysis, or stroke. Additional real-world analysis is ongoing and will be presented live.

Methods

11 patients (49% male, mean age 74 years) with symptomatic paroxysmal or persistent AF underwent ablation using the 122-electrode spherical array catheter. All procedures were performed with real-time electroanatomic mapping and PFA using a zero-fluoroscopy workflow. Primary outcomes included acute PVI success, procedural workflow metrics, and safety.

Conclusions

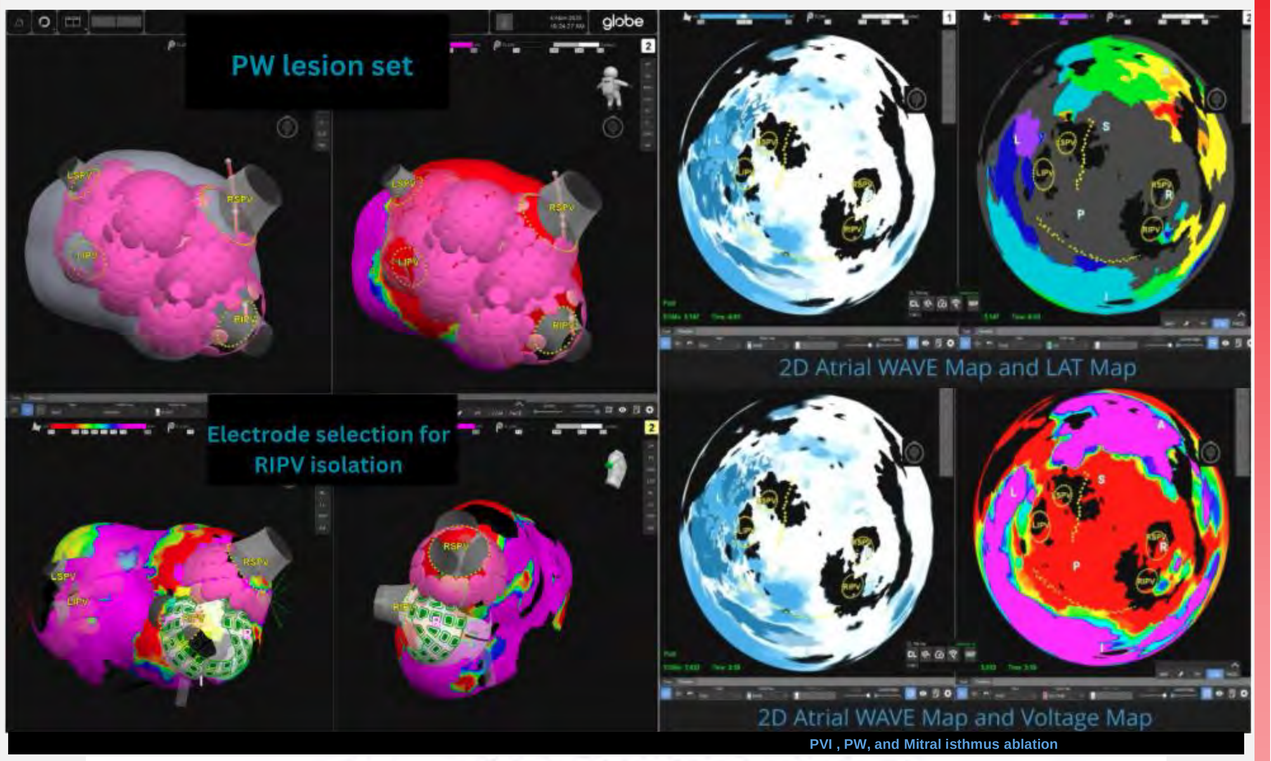
The 122-electrode spherical array catheter used with a zero-fluoroscopy approach demonstrated excellent procedural safety, efficiency, and versatility. Its integrated mapping-and-ablation design may streamline workflow and reduce procedural complexity compared with traditional PVI strategies. Ongoing studies will further clarify its long-term outcomes and clinical impact.

Disclosure

Devi Nair, MD, FACC, FHRS:
- Author received research grants, support, and/or honoraria from: Medtronic, Boston Scientific, Abbott, J&J Medtech, Siemens, Volta, and Atraverse.

All Other Authors:
- No relevant disclosures.

FIGURES



PVI , PW, and Mitral isthmus ablation

Comparison Metrics Summary

	Pivotal IDE	Real World
No. of Applications per PV	1.2 ± 0.4	1
No. of Applications per Patient	4.7 ± 1.0	4
Overall Procedure Time (min)**	97.9 ± 22.3	48 ±12
Catheter Left Atrial Dwell Time (min)**	60.8 ± 12.2	32 ±8
Fluoroscopy Time (min)	9.8 ± 8.3	0
Additional Lesions	0	PW 9 pt MI 3 pt CTI 1 pt

PW:Posterior Wall. MI: Mitral Isthmus. CTI: Cavotricuspid Isthmus

Successful Medical Management of a Pan-Spinal Epidural Abscess- A Case Report

Michalah O'Connell, DO; Praneeth Ulavala, MBBS; Samir Jaber, MD; Sahil Sabharwal, MD

Introduction

Spinal epidural abscess (SEA) is a rare but potentially catastrophic infection requiring rapid diagnosis to prevent permanent neurologic injury. Pan-spinal SEA involving nearly the entire spinal axis is exceptionally uncommon, and optimal management remains poorly defined. We describe the clinical course and multidisciplinary management of a pan-spinal SEA successfully treated without surgical decompression.

Case Description

A 59-year-old man with chronic neurologic deficits following a lumbar laminectomy performed over 40 years prior presented with new-onset urinary retention, fever, and worsening back pain. Magnetic resonance imaging (MRI) revealed a dorsal epidural abscess extending from C1 to L3. Blood cultures grew methicillin-sensitive Staphylococcus aureus. Given the absence of new or worsening motor or sensory neurologic deficits and the high morbidity associated with near-total spinal decompression, a non-operative approach with intravenous antibiotics and close neurologic monitoring was pursued. The hospital course was complicated by hyponatremia, metabolic encephalopathy, and a loculated left pleural empyema requiring video-assisted thoracoscopic surgery with decortication. Despite these complications, the patient remained neurologically stable, blood cultures cleared, and symptoms improved following six weeks of intravenous ceftriaxone. Follow-up MRI of the cervical and thoracic spine performed 70 days after diagnosis demonstrated complete radiographic resolution of the epidural abscess.

Discussion

This case demonstrates that carefully selected patients with extensive pan-spinal SEA who lack motor or sensory deficits on serial examinations may be successfully managed non-operatively. These findings support prioritizing close neurologic examination when determining the need for surgical intervention while maintaining vigilant multidisciplinary monitoring.

Submitted by Michalah O'Connell, DO

INCIDENTAL PARAESOPHAGEAL BRONCHOGENIC CYST PRESENTING WITH FEVER OF UNKNOWN ORIGIN AND ELEVATED INFLAMMATORY MARKERS

Mohammad Arham Siddiq, M.D. PGY-I, Khadijah Hamid, D.O.
Mercy Hospital Fort Smith

Introduction

Bronchogenic cysts are rare congenital mediastinal lesions that may remain asymptomatic for years [1]. In adults, they are often incidentally discovered; however, some present with compressive symptoms or systemic inflammatory findings that resemble occult infection or malignancy. Paraesophageal location further complicates evaluation, as lesions may not be visualized during routine endoscopy [2,3]. Accurate differentiation from intrinsic esophageal pathology requires a high index of suspicion and appropriate imaging.

Case presentation

A 42-year-old male with no significant past medical history underwent appendectomy in 2019, at which time computed tomography (CT) incidentally revealed a well-circumscribed posterior mediastinal mass adjacent to the distal esophagus. No further evaluation was pursued. In 2023, he developed intermittent fevers with leukocytosis and elevated C-reactive protein; repeat CT demonstrated stability of the lesion. Over the following two years, he experienced persistent low-grade fevers, progressive right upper quadrant discomfort, dysphagia, and early satiety. Repeat CT in 2025 showed interval enlargement from 3.1 × 2.8 cm to 3.4 × 3.1 cm. Esophagogastroduodenoscopy was normal, but endoscopic ultrasound revealed a 4-cm septated, avascular paraesophageal mass. Robotic-assisted resection was performed, and histopathology confirmed a bronchogenic cyst without dysplasia or malignancy.

Discussion and Conclusion

This case illustrates that bronchogenic cysts in adults may present with systemic inflammatory markers and progressive compressive symptoms despite initially stable imaging [1,4]. Normal endoscopic findings do not exclude extrinsic mediastinal pathology. Multimodal evaluation with CT and endoscopic ultrasound is essential for accurate characterization and operative planning. Early multidisciplinary collaboration and timely surgical intervention can prevent diagnostic delay and potential complications [5]. Recognition of these features supports structured follow-up of incidental mediastinal findings and consideration of congenital cystic lesions in adults with unexplained inflammatory markers.

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Double Interatrial Septum with PFO: An Unusual Cause of Stroke

Background

Double interatrial septum (DIS) is a rare congenital abnormality which occurs when two membranes separate the atria with a chamber in between. Blood stasis can occur in this space which may increase risk for stroke or TIA if a shunt is also present.

Case

The patient is a 63-year-old male with history of previous stroke who presented with chest pain. He underwent left heart catheterization which showed mild non-obstructive CAD and he was subsequently medically treated. Patient was then found to be in atrial fibrillation, and transesophageal echocardiogram (TEE) was planned with cardioversion. TEE showed double layer membrane structure of the atrial septum and distinct interatrial chamber communicating with the left atrium. Bubble study showed large patent foramen ovale (PFO) with right to left shunting.

Discussion

Double interatrial septum is an exceedingly rare phenomenon which may predispose patients to thromboembolism due to flow stagnation within the interatrial chamber. In this case, the coexistence of a large right-to-left shunting PFO and atrial fibrillation likely contributed to the patient's prior stroke. DIS is frequently missed on transthoracic echocardiography, making TEE vital for accurate diagnosis. Recognition of this pathology is important as management may call for PFO closure.

Conclusion

This case highlights the importance of thorough imaging including TEE when evaluating causes of cryptogenic strokes.

Submitted by Meghan Stevenson, DO

Background

Ineffective patient handoffs contribute to medical errors and care discontinuity. Despite electronic health record (EHR) integration, handoff practices remain variable, and discharge planning details are often inconsistently communicated, leading to information loss and adverse events.

Objectives

To assess baseline inpatient handoff practices among residents and evaluate the impact of standardized EHR SmartPhrases incorporating discharge planning fields on handoff quality and information retention.

Methods

Anonymous surveys were distributed to all residents at a single academic medical center. Baseline surveys assessed handoff methods, challenges, and need for standardization. We developed structured EHR SmartPhrases for three handoff sections. The intervention was implemented over six months with monthly reminders. Post-intervention surveys reassessed handoff confidence, information loss concerns, and discharge planning communication.

Results

Thirteen residents completed baseline surveys; 15 completed post-intervention surveys. Pre-intervention, 77% cited lack of standardization as a primary challenge, and 77% were concerned about information loss. Post-intervention, residents reporting extreme confidence increased from 15% to 47% ($p<0.05$). Concern about information loss decreased from 77% to 47%. All respondents (100%) reported improvement in information retention, with 60% reporting substantial improvement. Perceived usefulness increased from 8% to 60%, rating it extremely useful. Standardization as a challenge essentially disappeared (77% to 0%).

Conclusions

Structured EHR SmartPhrases significantly improved handoff confidence, reduced information loss concerns, and enhanced perceived usefulness. Despite optional adoption, the intervention successfully addressed resident-identified gaps. Future efforts should focus on systematic integration to maximize consistency and sustainability.

Submitted by Nadim-Nicolas Ghanem, MD

Background:
Signet-ring cell gastric carcinoma is an aggressive subtype of gastric cancer that often presents late due to diffuse infiltrative growth and nonspecific early symptoms, resulting in poor prognosis.

Objective:

We report a case of advanced signet-ring cell gastric carcinoma initially presenting with abdominal pain and complicated by venous thromboembolism.

Methods:
A 45-year-old woman with hypothyroidism and prior cholecystectomy presented to her primary care physician to establish care and reported chronic abdominal pain. One month later, she presented to the emergency department with acute shortness of breath and was found to have a non-occlusive pulmonary embolism. Computed tomography revealed retroperitoneal lymphadenopathy, findings concerning for lymphangitic carcinomatosis, and gastric wall thickening.

Further history revealed three months of epigastric pain, nausea, vomiting, intolerance to solid foods, and a 7-kg unintentional weight loss over one month. Physical examination was notable only for epigastric tenderness. Laboratory studies demonstrated anemia (hemoglobin 9.4 g/dL). Upper endoscopy showed diffusely infiltrative gastric disease with mucosal bleeding, and biopsy confirmed signet-ring cell carcinoma.

During hospitalization, hemoglobin declined to 4.9 g/dL. As a Jehovah's Witness, the patient declined blood transfusion. Given advanced disease, curative therapy was not pursued, and she received palliative gastric radiation for hemostasis before discharge with oncology and palliative care follow-up.

Results:
This case highlights the aggressive nature of signet-ring cell gastric carcinoma and its association with paraneoplastic thromboembolic events.

Conclusion:
Persistent dyspepsia and unexplained weight loss should prompt early endoscopic evaluation, even in younger adults, as delayed recognition may lead to advanced disease and serious complications.

Submitted by Nadim-Nicolas Ghanem, MD

Background

Medications for alcohol use disorder (MAUD) are effective yet substantially underutilized despite national guidelines. Examining variation in MAUD prescribing by provider specialty may identify gaps and opportunities to improve treatment delivery.

Objectives

To assess variation by provider specialty in MAUD prescription among U.S. adults newly diagnosed with alcohol use disorder (AUD).

Methods

We conducted a cross-sectional analysis using a national de-identified electronic health record database. Outpatient encounters from June 2020 to June 2025 were included. Adults aged ≥18 years with new AUD diagnosis (ICD-10 F10*) and no opioid use disorder history were eligible. The primary outcome was MAUD receipt at AUD diagnosis. Provider specialties were grouped into Psychiatry, Family/Internal Medicine (FM/IM), Nurse Practitioners (NP), Behavioral Health/Psychology (BH), Gastroenterology (GI), and Anesthesiology/Cardiology/Surgery. Logistic regression estimated odds ratios (ORs) for MAUD prescription by specialty, using FM/IM as reference.

Results

Among adults with newly diagnosed AUD (65.7% male, 73.3% White, mean age 51 years), 93.4% did not receive MAUD at diagnosis. Naltrexone was most prescribed (3.33%), followed by gabapentin (2.69%) and acamprosate (0.6%). Psychiatrists were most likely to prescribe MAUD (OR=2.74, 95% confidence interval [CI]:2.42–3.11), followed by EM (OR 1.29; 95% CI 0.36–0.5). Prescribing likelihood did not differ significantly for GI or Anesthesiology/Cardiology/Surgery compared with FM/IM.

Conclusions

MAUD remains markedly underutilized at AUD diagnosis, particularly in primary care. Targeted implementation strategies—such as clinical decision support, training, and workflow integration—may improve equitable access to evidence-based AUD treatment across outpatient settings.

Submitted by Nadim-Nicolas Ghanem, MD

Title: Distribution and Prevalence of Alpha-Gal Syndrome in Arkansas: Insights from the First Statewide Mandatory Reporting Program

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[4]Division of Pulmonary and Critical Care Medicine, Department of Internal Medicine, University of Arkansas for Medical Sciences

Background

Alpha-gal syndrome (AGS) is a delayed allergic reaction triggered by galactose-alpha 1,3-galactose in non-primate mammalian meat. Arkansas, a state with mandatory AGS reporting, provides a unique opportunity to evaluate the distribution and prevalence of this condition.

Objective

To describe the geographic and demographic patterns of AGS cases reported in Arkansas.

Methods

We analyzed AGS cases reported to the Arkansas Department of Health from September

2023 through July 2025. Cases were classified as confirmed (meeting clinical and laboratory criteria), suspected (laboratory criteria only), or not a case, according to the Council of State and Territorial Epidemiologists. Non-residents were excluded. Clinical criteria included allergic or gastrointestinal symptoms 2–10 hours after ingestion of mammalian products or within 2 hours of parenteral exposure to alpha-gal-containing medications or vaccines. Laboratory criteria required serum or plasma IgE ≥ 0.1 kU/L. Confirmed cases were stratified by age, sex, and region.

Results

A total of 5,167 cases were reported across 49 of 75 counties (65.3%); 403 (7.8%) were confirmed, 2,594 (50.2%) suspected, 1,797 (34.8%) open, and 383 (7.4%) not a case. Females comprised 58.6% of confirmed cases. Prevalence was highest among adults aged 40–49 years (19.9%) and lowest in those 20–29 years (7.7%). Most cases were reported from Northern Arkansas (73.7%), with fewer from central (21.6%) and southern regions (4.7%). Seasonal peaks occurred in summer (29.2%) and fall (28.5%).

Conclusion

Mandatory reporting provides a centralized dataset that informs public health planning, education, and resource allocation for AGS. Enhancing surveillance and mobilizing task forces remain key challenges to accurately capture confirmed cases.

Submitted by Nadia Makkoukdji, MD

CYTOKINE RELEASE SYNDROME-GUIDED RISK MODELS REDEFINE CARDIOTOXICITY SURVEILLANCE: OPTIMIZING DETECTION OF CANCER THERAPY-RELATED CARDIAC DYSFUNCTION AND ADVERSE CARDIOVASCULAR EVENTS AFTER CAR-T THERAPY:

Authors:

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Background: Chimeric antigen receptor T-cell (CAR-T) therapy is complicated by cytokine release syndrome (CRS) and cardiotoxicity. Cancer therapy-related cardiac dysfunction (CTRCD) and major adverse cardiac events (MACE) following novel immunotherapies lack validated surveillance strategies.

Methods: We retrospectively studied 81 CAR-T recipients. CTRCD was defined by guideline-based echocardiography. MACE included arrhythmia, HF, MI, or stroke at 30 days and 1 year. CRS-guided screening was compared with event-driven imaging. Logistic regression with point-based scoring generated risk models; calibration and ROC curves assessed performance.

Results: CRS-guided imaging achieved 100% sensitivity for GLS-only and LVEF+GLS CTRCD definitions. Risk models provided strong specificity and discrimination: CTRCD AUC 0.717, p=0.015 (specificity 97%); 30-day MACE AUC 0.649, p=0.048, (specificity 97.2%); 1-year MACE AUC 0.713, p=0.004, (specificity 83.7%). Probability curves stratified event risk from <10% at low scores to >80-90% at high scores. CRS-guided screening eliminated missed cases, while risk models added specificity by providing precision thresholds.

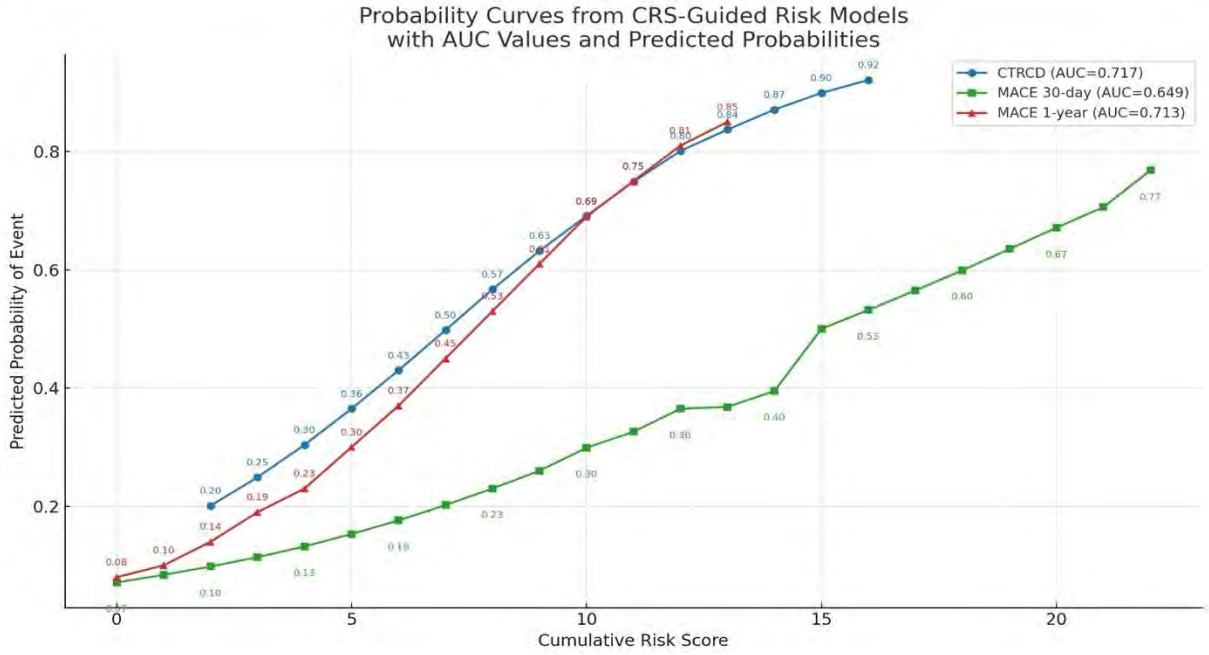
Conclusion: Combining high-sensitivity CRS screening with high-specificity risk models yields the first integrated algorithm for CTRCD and MACE detection after CAR-T therapy, establishing CRS as an actionable trigger and risk modeling as a precision surveillance tool.

Submitted by Nikhila Sampath-Kumar, MBBS

CTRCD Risk Model	Value	Standard error	Wald Chi-Square	Pr > Chi²	Wald Lower bound (95%)	Wald Upper bound (95%)	Odds Ratio	Odds ratio Lower bound (95%)	Odds ratio Upper bound (95%)
Intercept	-1.925	0.675	8.138	0.004	-3.248	-0.603			
Cumulative	0.274	0.112	5.967	**0.015**	0.054	0.494	**1.315**	*1.056*	*1.639*

MACE 30-day Risk Model	Value	Standard error	Wald Chi-Square	Pr > Chi²	Wald Lower bound (95%)	Wald Upper bound (95%)	Odds Ratio	Odds ratio Lower bound (95%)	Odds ratio Upper bound (95%)
Intercept	-2.564	0.889	8.324	0.004	-4.306	-0.822			
Cumulative	0.171	0.086	3.912	**0.048**	0.002	0.340	**1.186**	*1.002*	*1.405*

MACE 1-yr Risk Model	Value	Standard error	Wald Chi-Square	Pr > Chi²	Wald Lower bound (95%)	Wald Upper bound (95%)	Odds Ratio	Odds ratio Lower bound (95%)	Odds ratio Upper bound (95%)
Intercept	-2.477	0.771	10.335	0.001	-3.988	-0.967			
Cumulative	0.326	0.114	8.196	**0.004**	0.103	0.550	**1.386**	*1.108*	*1.733*



Submitted by Nikhila Sampath-Kumar, MBBS

Chronic Neutrophilic Leukemia in a Patient with Multiple Myeloma

- Nikhil Verma[1], Cesar Gentille[1], Susan Harley[1], Sharmilan Thanendrajan[1 1] -
University of Arkansas for Medical Sciences, Little Rock, AR, USA

A 76-year-old female with a history of IgG kappa Multiple Myeloma (MM) (diagnosed in 2001, status post tandem autologous stem cell transplantation in 2002, off treatment since 2007), presented for follow-up in 2025. At this time, imaging was negative, serum immunoglobulin fixation studies showed no M-protein, and bone marrow was morphologically negative. Flow cytometry MRD analysis demonstrated 0.05% atypical plasma cells concerning for mild indolent relapse of MM. In the subsequent visit, her WBC count increased from 6.4 to 71.2K/uL with ~62% neutrophils. Hemoglobin (12.1g/dL) and platelets (201K/uL) were within normal reference ranges. Bone marrow biopsy revealed a markedly hypercellular bone marrow with prominent granulocytic hyperplasia, concerning for involvement by a myeloproliferative neoplasm. Flow myeloma MRD analysis was negative. Repeat PET-CT demonstrated diffuse uptake in the skeleton without lytic lesions; however, splenomegaly was noted. NGS showed mutations in *CSF3R*, *ASXL1*, *DNMT3A*, *EZH2*, *SETBP1*, and *STAT3* genes. Chromosome analysis showed a normal female karyotype. The neutrophilia, CSF3R mutation, and absence of cytopenia and/or significant morphologic dyspoiesis, were consistent with a diagnosis of Chronic Neutrophilic Leukemia (CNL). Per the Mayo Clinic CNL risk model for survival, she was deemed a 'high-risk' patient due to her WBC count and concurrent *ASXL1* mutation at presentation. Considering the limited role of chemotherapy for this condition, she was started on Hydroxyurea 500mg BID for cytoreduction. Within 6 weeks of treatment, her WBC count decreased to ~22K. She is currently undergoing a work-up to determine eligibility for an allogeneic hematopoietic stem cell transplant.

Submitted by Nikhil Verma, MBBS

Tacrolimus-Induced Cardiomyopathy Mimicking Amyloidosis of the Heart

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A 70-year-old African American man with a medical history of hypertension, type 2 diabetes mellitus, stable coronary artery disease, atrial flutter status post ablation, and deceased-donor kidney transplantation in 2020 maintained on Tacrolimus-based immunosuppression. During routine cardiology follow-up in June 2024, transthoracic echocardiography (TTE) demonstrated severe left ventricular hypertrophy with an increase in interventricular septal thickness from 1.1 cm (October 2020) to 1.6 cm, raising concern for infiltrative cardiomyopathy. Cardiac magnetic resonance imaging revealed asymmetric left ventricular wall thickening as well as abnormal multiple patchy areas of subendocardial and mid-myocardial delayed enhancement involving the anteroseptal, inferoseptal, anterolateral, inferolateral and anterior walls at the base and mid myocardial levels, consistent with infiltrative cardiomyopathy. Further, the myocardial T1 relaxation was elevated. Differential diagnoses at this point included hypertrophic cardiomyopathy, cardiac amyloidosis, and other infiltrative or nonclassified cardiomyopathies. Technetium-99m pyrophosphate scintigraphy was negative for transthyretin amyloidosis. Laboratory evaluation showed mildly elevated serum free light chains (2.86 mg/dL) with a normal kappa-to-lambda ratio, and no monoclonal protein on serum or urine electrophoresis or immunofixation. Despite this, progressive hypertrophy was noted, with septal thickness increasing to 2.3 cm by March 2025. The patient was subsequently referred to the Myeloma Clinic. He underwent a cardiac biopsy, which was negative for infiltrative pathology. Given the absence of alternative etiologies, Tacrolimus-induced cardiomyopathy, a rare adverse effect of this Calcineurin-inhibitor drug, was suspected. Tacrolimus was discontinued and replaced with Belatacept in August 2025, resulting in partial regression of septal thickness to 2.1 cm within three months.

Submitted by Nikhil Verma, MBBS

The Protective Anomaly: Absent Left Atrial Appendage Defers Unnecessary Anticoagulation & procedures

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Abstract:

Background:

We present a case of an elderly patient with paroxysmal atrial fibrillation (AF) in whom anticoagulation became contraindicated due to a high risk of bleeding. However, no further treatment was required due to a congenital absence of the left atrial appendage (LAA).

Objectives:

To report a case of congenital absence of the LAA, a rare congenital anomaly

Case summary:

An 84-year-old male with a history of paroxysmal AF was managed with apixaban and metoprolol. He was admitted for severe bradycardia and encephalopathy. Metoprolol was held, and his heart rate gradually improved during the admission. Due to his high HAS-BLED score, consideration was given to implanting a WATCHMAN device. Fortunately, a transthoracic echocardiogram (TTE) performed during the admission revealed a congenital absence of the LAA. As a result, the decision was made to discontinue apixaban without pursuing further intervention.

Discussion:

Since approximately 90% of thromboemboli in AF originate from the LAA, standard care for patients who cannot tolerate anticoagulation includes LAA occlusion devices to mitigate stroke risk. However, in this patient, neither anticoagulation nor occlusion was necessary due to the congenital absence of the LAA.

Conclusion:

Although rare, when a TTE or TEE is performed in patients with atrial fibrillation, clinicians should carefully assess for congenital absence of the LAA, as its absence may eliminate the need for anticoagulation in high-risk patients.

Submitted by Omar Darwish, MD

Beyond Anemia: Severe Vitamin B12 Deficiency Presenting With Pancytopenia and Hemolysis

Paige Nappier MD, Mazen Khalil MD, Aayushi Pareek MD, Amanda Napier MD Sai Yerramalla MD, Ishita Gupta MD, Joshua Anyekasa MD

Introduction:
Vitamin B12 deficiency is most commonly caused by autoimmune-mediated malabsorption in western societies. Although classically associated with neuropathy, neuropsychiatric changes, and macrocytic anemia, profound B12 deficiency may present with atypical and severe hematologic manifestations, including pancytopenia and hemolysis, leading to a diagnostic mystery.

Case Description:
A 53-year-old female with no significant past medical history presented with shortness of breath, dysphagia and one episode of near syncope associated with dizziness. She denied prior history of anemia, stroke, or autoimmune diseases and further endorsed two weeks of progressive weakness and dyspnea on exertion. On presentation, she was tachycardic and appeared pale. Initial imaging and metabolic evaluation were unremarkable. Complete blood count revealed pancytopenia with a white blood cell count 2.8 x 10^9/L, hemoglobin 6.3 g/dL, platelet count 78 x 10^9/L. She was treated with the transfusion of 2 units of packed red blood cells.

Further workup included iron studies, bilirubin, hemolysis labs, folate, vitamin B12 level, peripheral smear, direct antiglobulin test and a hematology consultation. Evaluation revealed severe vitamin B12 deficiency with laboratory evidence of hemolysis. Autoimmune testing demonstrated positive parietal cell antibodies, negative intrinsic factor antibodies and negative coombs test, consistent with autoimmune gastritis. The patient was treated with intramuscular vitamin B12 replacement, proton pump inhibitor therapy, and high dose corticosteroids which showed rapid improvement in hematologic abnormalities and presenting symptoms.

Discussion:
This case illustrates a rare but important presentation of severe vitamin B12 deficiency causing pancytopenia and hemolysis secondary to intramedullary hemolysis and ineffective erythropoiesis. Early recognition of this reversible condition is critical in effective treatment and highlights the importance of comprehensive evaluation in patients presenting with pancytopenia.

Submitted by Paige Nappier, MD

Early Onset Aggressive Pancreatic Cancer in a 43-year-old Female

Paige Nappier MD, Ishita Gupta MD, Duha Al-Smadi MD

Introduction

Early-onset aggressive pancreatic cancer (EOPC) is pancreatic cancer diagnosed in individuals under age 50. EOPC represents 5-10% of all pancreatic cancers and it exhibits rapid progression and poor prognosis.

Case Description/Methods

A 43-year old female with a medical history of Type 2 Diabetes Mellitus and Obesity and social history of 15 pack years of smoking, presented with complaints of constipation and abdominal pressure for one week. She denied previous history of pancreatitis, alcohol abuse, gallstones or family history of cancer. Abdomen and pelvis CT scan revealed a pancreatic head mass and findings concerning of liver metastasis. She underwent ERCP which demonstrated a malignant appearing main biliary duct stricture.

The ERCP brushings underwent biliary cystoscopy which displayed two cell types, one being dysplastic epithelial cells and a second population of benign ductal cells. CA 19-9 resulted 100x above the normal limit. Repeat CT taken 4 months later, showed progression of the pancreatic head mass by 7mm, growth of the hepatic density by 16mm.

Liver biopsy results confirmed moderately differentiated adenocarcinoma. Immunohistochemical staining was consistent with pancreaticobiliary cell origin or metastatic pancreatic carcinoma. PET scan confirmed a primary pancreatic malignancy and extensive hepatic metastasis. Genetic sequencing showed a KRAS pathogenic variant exon mutation. She completed two cycles of chemotherapy with loss of life being 4 months after initial presentation.

Discussion

This case highlights the rapid progression of EOCP, emphasizing the importance of patient education, knowledge of family history and lifestyle modifications to improve overall health and actions individuals can take in cancer prevention.

Submitted by Paige Nappier, MD

When Pregabalin Takes Your Breath Away: A Case of Severe Medication-Induced Pulmonary Edema.

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INTRODUCTION

Pregabalin, a γ-aminobutyric acid analog that binds the α2δ subunit of voltage-gated calcium channels, is commonly prescribed for neuropathic pain, fibromyalgia, and seizure disorders [1]. Its use has increased substantially as part of multimodal pain strategies aimed at reducing opioid exposure [2,3]. Peripheral edema is a known adverse effect of pregabalin; however, pulmonary edema is rare and likely underrecognized, particularly in patients without systolic heart failure [4]. Gabapentinoid-associated edema is thought to result from vasodilatory effects mediated through α2δ subunits on L-type calcium channels, leading to altered myogenic tone similar to calcium channel blockers [5,6,7]. Pharmacovigilance data suggest that pregabalin poses a higher risk than gabapentin, particularly after dose escalation [5,6]. We report a case of pregabalin-associated pulmonary edema presenting as acute hypoxic and hypercapnic respiratory failure in a patient with preserved systolic function.

CASE DESCRIPTION

A 76-year-old man with hypertension, hyperlipidemia, rheumatoid arthritis on chronic immunosuppression, peripheral neuropathy, and possible atrial fibrillation on apixaban presented with 10 days of progressive dyspnea following transition from gabapentin to pregabalin, with dose escalation to 150 mg twice daily one week prior. He initially developed bilateral lower-extremity edema, which resolved, followed by worsening respiratory distress. On admission, he was hypoxemic and hypercapnic, requiring high-flow nasal cannula. Laboratory testing showed normal leukocyte count, low procalcitonin, elevated pro–B-type natriuretic peptide (2,940 pg/mL), and negative infectious studies. Chest imaging revealed bilateral ground-glass opacities with pleural effusions. Transthoracic echocardiography demonstrated preserved left ventricular ejection fraction

(55–60%) without valvular disease. The patient improved rapidly after intravenous diuresis and discontinuation of pregabalin, with complete resolution of oxygen requirements within 72 hours.

DISCUSSION

This case illustrates pregabalin-associated pulmonary edema mimicking acute decompensated heart failure or pneumonia. Gabapentinoid-induced edema typically occurs shortly after initiation or dose escalation and resolves with drug discontinuation [8]. Elevated natriuretic peptides and radiographic pulmonary edema can obscure diagnosis, but preserved systolic function and rapid clinical improvement support a medication-induced mechanism.

Observational studies assessing pregabalin and heart failure risk have yielded mixed results, possibly because of underpowering for rare adverse events and the exclusion of vulnerable populations. This case underscores the importance of medication reconciliation and awareness of gabapentinoid-related pulmonary complications, particularly in older adults with cardiovascular comorbidities. [9]

CONCLUSION

Pregabalin may precipitate acute pulmonary edema and respiratory failure even in patients without systolic heart failure. Awareness of this rare adverse effect is essential to ensure timely recognition and avoid unnecessary interventions.

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Submitted by Praneeth Ulavala, MBBS

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Submitted by Praneeth Ulavala, MBBS

Influenza as an Aggravating Factor for Acute ST-Elevation Myocardial Infarction: A Case-Based Insight

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Ziad Ghneim, D.O.

White County Medical Center-Unity Health, Searcy, Arkansas

Abstract:

Introduction:
There is increasing evidence that viral infection could trigger myocardial ischemia. The burden of viral infection plays a critical role in prompting atherogenesis. Early diagnosis that prompts timely critical intervention is often lifesaving.

Case Presentation:
An 87-year-old female with a past medical history significant for hypothyroidism, hypertension, and OSA presented to the emergency department with shortness of breath, nausea, and vomiting for two days. One day before presentation, the patient was evaluated by PCP for upper respiratory symptoms and tested positive for influenza. She was prescribed Oseltamivir and discharged home. Overnight, she developed worsening shortness of breath accompanied by nausea and vomiting. She denied chest pain, palpitation, and sweating. She was treated with bronchodilator therapy and continued oseltamivir. On hospital day two, the patient's respiratory status deteriorated, with increasing oxygen requirements, accessory muscle use, and oxygen desaturations to the upper 80s. Supplemental oxygen was escalated to a simple face mask, and racemic epinephrine was administered. She subsequently became diaphoretic with tachycardia, prompting initiation of CPAP. An electrocardiogram obtained at that time demonstrated ischemic changes in the anterior leads. She was diagnosed with an acute anterior ST-elevation myocardial infarction and underwent emergent cardiac catheterization with stent placement to the left anterior descending artery. Transthoracic echocardiography revealed a left ventricular ejection fraction of 35%.

Discussion:
There is a significant association between respiratory infections, especially influenza, and acute myocardial infarction. Our case demonstrated that a patient can subsequently develop STEMI after a flu infection.

Submitted by Rupak Chowdhury, MD

Mucormycosis Colitis

Introduction:
Mucormycosis is an aggressive, angioinvasive fungal infection that primarily affects immunocompromised individuals, including those with uncontrolled diabetes, hematologic malignancies, or prolonged corticosteroid use. Gastrointestinal involvement is rare, accounting for 7–8% of cases. Colonic mucormycosis is associated with mortality rates exceeding 80%, particularly when diagnosis and treatment are delayed beyond five days from onset.

Case Presentation:
A 77-year-old woman with granulomatosis with polyangiitis, inflammatory polyarthritis, chronic kidney disease, and coronary artery disease presented with three days of nausea, vomiting, and diarrhea. She was admitted with sepsis and was empirically treated with broad-spectrum antibiotics. Initial imaging suggested colitis, and she showed transient clinical improvement following antibiotic de-escalation. She subsequently developed dysphagia, with endoscopy revealing a large gastroesophageal junction ulcer. Several days later, she experienced worsening abdominal pain and distention; repeat imaging demonstrated bowel perforation and possible ischemia. Emergent exploratory laparotomy revealed multifocal colonic perforations and intra-abdominal abscesses, necessitating total abdominal colectomy with end ileostomy. Cultures grew Enterococcus faecalis and Bacteroides ovatus, while tissue histopathology confirmed mucormycosis. Antifungal therapy with amphotericin B was initiated eight days after clinical deterioration.

Discussion:
Colonic mucormycosis often presents with nonspecific features that mimic ischemic colitis or other intra-abdominal pathologies, leading to diagnostic delays. Its angioinvasive nature causes vascular thrombosis, ischemic necrosis, and tissue infarction, frequently compounded by secondary bacterial infection. This case underscores that mucormycosis can occur in patients without profound immunosuppression and highlights the importance of early tissue diagnosis and prompt initiation of antifungal therapy in atypical or necrotic colonic disease.

Submitted by Rachel Modersitzki, DO

A Frank Starling Based Framework for Cardiovascular Risk Stra:fica:on in Pa:ents Undergoing Transjugular Intrahepa:c Portosystemic Shunt (TIPS): A Preliminary Analysis

Authors:

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Background

Patients with cirrhosis undergoing transjugular intrahepatic portosystemic shunt (TIPS) experience abrupt preload augmentation, splanchnic blood volume redistribution, and altered ventricular–vascular coupling. Chronic systemic vasodilation and cirrhotic cardiomyopathy create a hyperdynamic yet reserve-limited circulation in which the ventricle may operate in a physiologic state that constrains its ability to convert additional preload into effective forward flow. Conventional echocardiographic parameters may incompletely characterize cardiovascular reserve or tolerance to these hemodynamic shifts. We evaluated whether a Frank–Starling (FS)–based framework integrating forward flow and congestion surrogates better discriminates post-TIPS heart failure risk.

Methods

Pre-TIPS transthoracic echocardiograms were analyzed to derive forward flow metrics (LVOT velocity–time integral [VTI] and stroke volume index [SVI]) and congestion surrogates (E/e', tricuspid regurgitation velocity [TRV], and a composite congestion score). The composite score incorporated markers of left-sided filling pressure (any elevated E/e'), right atrial pressure (RAP = 15 mmHg), and pulmonary/right-sided pressure (TRV ≥2.8 m/s or RVSP ≥35 mmHg), normalized by the number of available components and dichotomized into low versus high congestion. Patients were classified into four FS phenotypes (high vs low flow × high vs low congestion) using both prespecified clinical thresholds and cohort medians. Outcomes included heart failure (CHF) readmission and a composite of volume overload or escalation of diuretic therapy at post-procedural all-cause index readmission.

Results

FS phenotyping revealed substantial heterogeneity in post-TIPS outcomes across flow–congestion states that was not apparent using isolated echocardiographic measures. Using LVOT VTI–E/e' phenotypes with prespecified cutoffs, CHF readmission occurred more frequently in low-flow/low-congestion patients than in high flow/low-congestion patients (16.7% [1/6] vs 6.0% [5/84]), with no events observed in high-flow/high-congestion patients (0/4). Composite outcomes followed a similar pattern (26.2% vs 16.7%). Median-based cutoffs generated all four phenotypes and demonstrated higher composite event rates in low-flow states (11.1–20.7%). When congestion was defined by TRV, prespecified cutoffs failed to identify any low-flow/high-congestion patients. Using median-based thresholds, composite event rates varied across phenotypes, with lower rates observed in low flow/high-congestion patients (6.3–12.5%) compared with high-flow/low-congestion patients (22.2–41.7%), indicating discordance between pulmonary pressure–based congestion and clinical outcomes. Pairing SVI with a binary composite congestion score enabled identification of all four FS phenotypes across cutoff strategies. Using prespecified thresholds, composite outcomes occurred in 18.3% of high-flow/low-congestion patients (11/60),

30.0% of low-flow/low-congestion patients (3/10), and 33.3% of high-flow/high-congestion patients (1/3). Median-based SVI cutoffs demonstrated the highest composite event rate in the low-flow/high congestion phenotype (50.0% [1/2]), acknowledging small sample sizes.

Conclusions

An FS-based hemodynamic framework integrating forward flow and congestion reveals clinically meaningful heterogeneity in post-TIPS outcomes that is not captured by single echocardiographic parameters. Across most congestion definitions and analytic strategies, impaired forward flow was associated with higher rates of adverse outcomes, reflecting limited cardiovascular reserve in cirrhosis. In contrast, pulmonary pressure–based congestion alone demonstrated inconsistent associations with outcomes, supporting the need for integrated flow– congestion phenotyping. These findings support a physiology-informed approach to cardiovascular risk stratification in patients with cirrhosis undergoing TIPS.

Submitted by Shambi Anshumali, MD

Background: Transjugular intrahepatic portosystemic shunt (TIPS) increases venous return and places unique hemodynamic stress on the heart. Baseline echocardiographic predictors of adverse outcomes are inconsistent, and the prognostic value of post-TIPS cardiac adaptation remains unclear.

Objective: To evaluate baseline and post-TIPS echocardiographic parameters related to diastolic function in association with mortality and transplant-free survival.

Methods: This retrospective cohort included 175 adults who underwent TIPS between 2014 and 2024 with documented pre-TIPS echocardiography; 71 had paired pre- and post-TIPS studies. Diastolic function parameters (diastolic grade, E/e', E/A, TAPSE, TRV, LAVI) were collected. Delta values were calculated as post-minus-pre TIPS echo measurements. Multivariable logistic regression adjusted for age, heart failure history, pre-TIPS MELD-Na, and 3-month post-TIPS delta MELD-Na.

Results: Baseline parameters did not differ between survivors and non-survivors except for higher E/e' among decedents (p=0.043). In adjusted models, baseline E/e' was not independently associated with mortality; only MELD-Na remained significant (OR 1.09, p=0.008). In the paired cohort, worsening diastolic dysfunction after TIPS was associated with markedly higher mortality (77.8% vs 36.6%, p=0.024), as was failure of LAVI augmentation (63.2% vs 32.0%, p=0.040). These associations were attenuated in adjusted models. No delta parameters were associated with death or transplant. Kaplan-Meier and Cox analyses showed no significant time-to-event differences.

Conclusion: Dynamic cardiac adaptation after TIPS, including worsening diastolic function and lack of LAVI augmentation, was strongly associated with mortality in

Submitted by Shambi Anshumali, MD

unadjusted analyses, whereas baseline echocardiography had limited prognostic value. These findings suggest post TIPS cardiac reserve may help identify high-risk patients and warrant prospective evaluation.

Submitted by Shambi Anshumali, MD

Background: Necrotizing pancreatitis commonly results from gallstone disease or alcohol use. Infectious etiologies are rare, with Salmonella-associated pancreatitis reported in approximately 3% of Salmonella infections. Infected pancreatic necrosis typically involves gut flora such as Escherichia coli and Klebsiella pneumoniae through bacterial translocation. Salmonella enterica as a primary causative organism of necrotizing pancreatitis with polymicrobial superinfection is exceedingly uncommon.

Objectives: To describe a case of Salmonella-induced necrotizing pancreatitis with atypical polymicrobial infection and to review the stepwise interventional management approach in an immunocompromised host.

Methods: We present a case report of a 35-year-old female with adult-onset Still's disease, macrophage activation syndrome, and chronic immunosuppression who developed necrotizing pancreatitis without traditional etiologies.

Results: The patient presented with hematemesis, hematochezia, and septic shock. CT imaging revealed necrotizing pancreatitis with a large multiloculated hemorrhagic collection and active intra-abdominal bleeding. Blood cultures grew Listeria monocytogenes, while the pancreatic collection grew Salmonella enterica and Proteus mirabilis, an atypical microbiologic profile. Epidemiologic investigation identified household exposure through a spouse employed at a poultry processing facility. Management followed a minimally invasive stepwise approach: interventional radiology-guided coil embolization of a distal superior mesenteric artery branch controlled active hemorrhage, followed by percutaneous catheter drainage. Targeted antibiotic therapy with meropenem was administered for five weeks. Follow-up imaging demonstrated complete resolution.

Conclusions: Salmonella-induced necrotizing pancreatitis is rare but should be considered in immunocompromised patients without traditional risk factors. Atypical organisms may be identified when foodborne pathogens are the primary etiology. A stepwise, minimally invasive

Submitted by Shambi Anshumali, MD

approach can achieve favorable outcomes in complex cases.

Submitted by Shambi Anshumali, MD

Background: Mixed connective tissue disease (MCTD) is a rare systemic autoimmune disorder characterized by overlapping features of systemic lupus erythematosus, systemic sclerosis, and polymyositis in the presence of high-titer anti-U1 ribonucleoprotein (anti-U1 RNP) antibodies. While Raynaud's phenomenon (RP) and microvascular disease are hallmark features, progression to large vessel occlusion represents an uncommon and potentially devastating complication.

Method: We report a 26-year-old woman with a 5-year history of intermittent RP who presented with progressive limb claudication, generalized weakness, and pruritic. Initial evaluation revealed absent peripheral pulses and knee/ankle reflexes, elevated ESR 53 mm/hr, ANA (4+, nuclear speckled pattern), anti-Ro antibodies, PM-Scl 75,100 and anti-U1 RNP antibodies all were positive. RF, Anti-CCP, and Anti-dsDNA were negative. Electromyography demonstrated a myopathic pattern; nerve conduction studies showed pure motor axonal polyneuropathy, and nailfold capillaroscopy revealed a scleroderma spectrum pattern. Computed tomography angiography demonstrated chronic thrombosis of bilateral external iliac arteries and distal left internal iliac artery involvement (Image). Hypercoagulability workup was negative. The patient was initially diagnosed with undifferentiated connective tissue disorder and treated with warfarin, aspirin, methylprednisolone, and methotrexate. After 1.5 years without improvement in claudication symptoms, she underwent left external iliac artery angioplasty followed by bilateral angioplasty for persistent occlusion. She was transitioned to rivaroxaban, resulting in significant clinical and radiographic improvement at 6-month follow-up.

Results: Large vessel arterial occlusion, while rare in MCTD, represents a serious complication requiring aggressive multimodal therapy including immunosuppression, anticoagulation, and potentially endovascular intervention. Early recognition and treatment may prevent progression to irreversible ischemic damage.

Submitted by Shung Chiu, MD

Incidence and Predictors of High-grade Atrioventricular Block after Transcatheter Tricuspid Valve Replacement: a real-world analysis

Authors: Sai Nikhila Ghanta, MD; Dharmik Jadvani; Bhupender Tayal, MD

Background:

Transcatheter tricuspid valve replacement (TTVR) offers reliable reduction of severer tricuspid regurgitation with a minimal invasive approach and improves quality of life. However, post procedural conduction disturbances particularly high-grade atrioventricular nodal block (HAVB) remains a significant concern. Despite this, predictors of HDAVB after TTVR remain poorly defined. We aimed to explore the incidence, risk factors, and clinical implications of HDAVB.

Methods:

Using TriNetX, a US database, we conducted retrospective study on patients who underwent TTVR using relevant ICD-10 and CPT codes. Patients with prior heart transplant or permanent pacemakers were excluded. Two cohorts were defined: patients who developed HDAVB within 1 month of TTVR vs those who did not 1 month. Baseline demographic, clinical, and comorbidity data were extracted. Variables included age, sex, heart failure status, conduction system disease, renal function, and comorbid conditions. Outcomes of interest were the incidence of HDAVB at 1 month and baseline predictors of this complication.

Results:

Of the total 337 patients who underwent TTVR, 34 patients (10%) developed HDAVB within a month post TTVR. Patients who developed HDAVB were older (mean age 71.8 ± 13.3 vs 62.9 ± 18.8 years, p=0.01, SD 0.55) and hypertensive (84% VS 63%, p=0.0167, SD 0.50). Conduction system abnormalities (CSA): first-degree AV block, p=0.0002; left anterior fascicular block, p<0.0001; left bundle branch block, p<0.0001; persistent atrial fibrillation p=0.0112; atrial flutter p<0.0001, were disproportionately higher in the HDAVB cohort.

Conclusion:

In this real-world analysis of patients undergoing TTVR, incidence of developing HDAVB within 1 month is 10%, and baseline CSAs emerged as significant risk factors. Large multicenter studies are needed to idetify high risk patients in the peri-procedural planning of TTVR.

Supplementary data for authors to review:

Table 1. Baseline Characteristics of Patients with vs. without HDAVB after TTVR

Comparison between patients with HDAVB (n=34) and Control (n=303).

Submitted by Sai Nikhila Ghanta, MD

Characteristic	HDAVB (n=34)	Control (n=303)	P-value	Std. Diff
Demographics				
Age, mean ± SD	71.8 ± 13.3	62.9 ± 18.8	0.010	0.5466
Female, n (%)	25 (74%)	159 (62%)	0.2689	0.2138
Not Hispanic or Latino, n (%)	29 (91%)	226 (88%)	0.6564	0.0869
White, n (%)	25 (78%)	188 (73%)	0.5468	0.1161
Black or African American, n (%)	10 (31%)	31 (12%)	0.0034	0.4790
Diagnoses				
Chronic kidney disease, n (%)	15 (47%)	93 (36%)	0.2386	0.2182
Diabetes mellitus, n (%)	10 (31%)	71 (28%)	0.6669	0.0796
Hypertension, n (%)	27 (84%)	162 (63%)	0.0167	0.4996
Ascites, n (%)	10 (31%)	47 (18%)	0.0823	0.3037
Edema, n (%)	14 (44%)	118 (41%)	0.8521	0.0349
Peripheral vascular disease, n (%)	10 (31%)	39 (15%)	0.0223	0.3878
COPD, n (%)	10 (31%)	47 (18%)	0.0823	0.3037
First-degree AV block, n (%)	10 (31%)	23 (9%)	0.0002	0.5794
Left anterior fascicular block, n (%)	10 (31%)	14 (5%)	<0.0001	0.7071
Left bundle-branch block, n (%)	10 (31%)	10 (4%)	<0.0001	0.7704

Right bundle-branch block, n (%)	10 (31%)	59 (23%)	0.2994	0.1874
Persistent AF, n (%)	17 (53%)	79 (31%)	0.0112	0.4658
Chronic AF, n (%)	10 (31%)	83 (32%)	0.9050	0.0225
Unspecified AF/flutter, n (%)	30 (94%)	176 (68%)	0.0029	0.6821
Atypical atrial flutter, n (%)	10 (31%)	12 (5%)	<0.0001	0.7381
Sick sinus syndrome, n (%)	10 (31%)	19 (7%)	<0.0001	0.6339
Supraventricular tachycardia, n (%)	10 (31%)	40 (16%)	0.0270	0.3770
Ventricular tachycardia, n (%)	10 (31%)	33 (13%)	0.0058	0.4555
Laboratory Values				
Creatinine, mg/dL	1.28 ± 0.53	1.19 ± 0.76	0.4865	0.1478
Hemoglobin, g/dL	12.3 ± 2.18	12.2 ± 2.16	0.7967	0.0494
Albumin, g/dL	4.15 ± 0.62	3.88 ± 0.63	0.0279	0.4287
INR	1.84 ± 1.48	1.51 ± 0.59	0.0232	0.3011
GFR, mL/min/1.73m^2	53.5 ± 25.7	63.7 ± 27.3	0.0476	0.3852
LVEF (%)	51.7 ± 7	57.2 ± 8.4	0.0589	0.7186
Medications				

High-ceiling diuretics, n (%)	31 (97%)	208 (81%)	0.0246	0.5247
Direct factor Xa inhibitors, n (%)	19 (59%)	115 (45%)	0.1176	0.2960
Warfarin, n (%)	14 (44%)	93 (36%)	0.4034	0.1549
Beta blockers, n (%)	30 (94%)	209 (81%)	0.0797	0.3831
ACEi/ARB, n (%)	22 (69%)	126 (49%)	0.0353	0.4091
SGLT2 inhibitors, n (%)	11 (34%)	48 (19%)	0.0378	0.3613
Aldosterone antagonists, n (%)	18 (56%)	98 (38%)	0.0486	0.3691

Sodium–glucose cotransporter-2 inhibitors in pulmonary hypertension: a systematic review

Authors: Sai Nikhila Ghanta, MD; Dharmik Jadvani ; Lindsay Blake; Bhupendra Tayal, MD

Background:
Sodium–glucose cotransporter-2 inhibitors (SGLT2i) improve diastolic function in patients with heart failure with preserved ejection fraction (HFpEF). Their effects on pulmonary artery pressures (PAP) and right ventricular (RV) systolic function in HFpEF, remain poorly defined. This systematic review aims to evaluate the impact of SGLT2i on PAPs and RV/PA coupling in HFpEF patients.

Methods:
We conducted a systematic review of PubMed, Embase, Cochrane, Scopus and Web of Science through March 2024, evaluating SGLT2i in adults with PH. Records were screened and eligible studies were selected by 2 independent investigators. Primary outcomes were changes in pulmonary hemodynamics– mean PAP, pulmonary vascular resistance, and systolic PAP.

Results:
Of 545 initially identified studies, 6 studies (2 randomized controlled trials, 3 observational and 1 cohort study; 13,503 participants) met inclusion criteria (Figure 1). SGLT2i were associated with significant reductions in systolic PAP (8.7 vs 1.8 mm Hg; p<0.00; 3 studies) , lower incidence of PH(median PH-free time: 10.9 vs 7.6 years; p<0.00; 1 study), and improvement in tricuspid annular plane systolic excursion (TAPSE) and RV-PA coupling(TAPSE/systolic PAP: 0.45 vs 0.25 mm/mmHg; p=0.00;1 study) in right heart failure with severe PH.

Conclusion:
SGLT2i appear to be a promising therapeutic option for the management of PH in patients with HFpEF with favorable effects on PASP and RV–PA coupling. Large-scale, randomized studies are warranted to validate these findings.

Submitted by Sai Nikhila Ghanta, MD

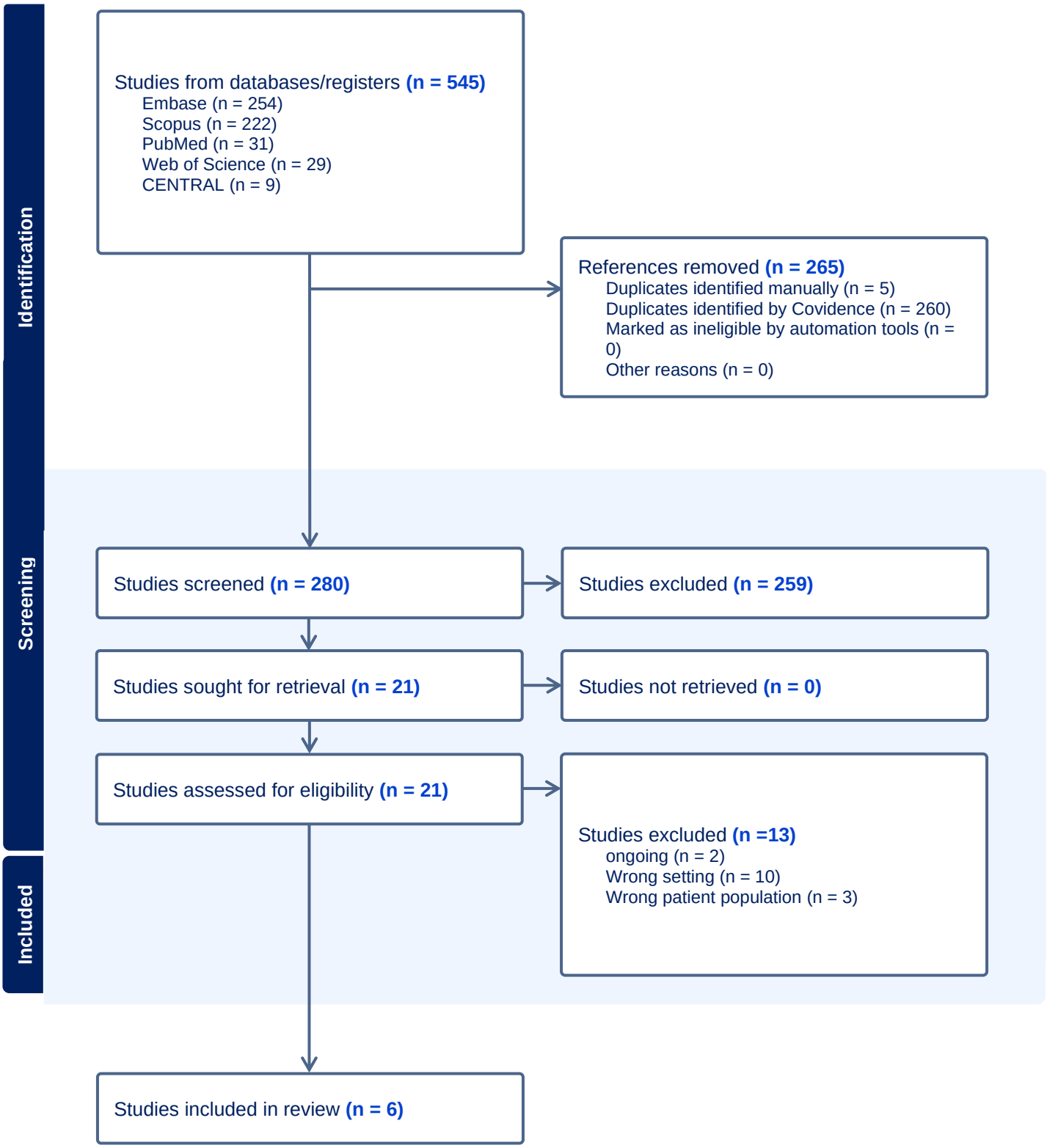

Figure 1: PRISMA flow chart showing the methodology of the systematic review on SGLT2 inhibitors on Pulmonary Hypertension.

Beyond SIADH: Pericardial Effusion Related Hyponatremia in Systemic Lupus Erythematosus

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Abstract

Background: Symptomatic hyponatremia is a medical emergency with multiple potential causes. Pericardial effusion is an underrecognized etiology, particularly in patients with systemic lupus erythematosus (SLE).

Case Presentation: A 40-year-old African American woman with SLE, diabetes, and hypertension presented with altered mental status, nausea, and peripheral edema. Laboratory evaluation revealed severe hyponatremia (109–110 mEq/L) and normal renal function. Initial hypertonic saline therapy produced minimal improvement. Echocardiography revealed a large loculated pericardial effusion with early right ventricular diastolic collapse. Emergent pericardiocentesis drained ~700 mL of serosanguinous fluid, resulting in rapid correction of sodium and improved mental status. Rheumatologic evaluation confirmed an SLE flare, managed with corticosteroids and hydroxychloroquine. Follow-up echocardiography demonstrated complete resolution of the effusion.

Discussion: Hyponatremia in pericardial effusion is usually dilutional, caused by reduced effective arterial blood volume and non-osmotic vasopressin release. Rapid sodium normalization following pericardiocentesis supports a causal relationship. Management should target the effusion and underlying disease rather than sodium replacement alone.

Conclusion: Symptomatic hyponatremia can serve as a reversible marker of hemodynamically significant pericardial effusion in SLE. Timely pericardiocentesis can rapidly correct both electrolyte and hemodynamic abnormalities.

Introduction

Hyponatremia is defined as a serum sodium concentration <135 mEq/L. While most cases are asymptomatic, symptomatic hyponatremia can present with headache, nausea, vomiting, confusion, seizures, or coma [1]. Pericardial effusion is a recognized cardiac

manifestation of SLE but is an underappreciated cause of symptomatic hyponatremia. We report a case highlighting this association, management, and outcomes.

Case Presentation

A 40-year-old African American woman with SLE, diabetes, and hypertension presented to the emergency department with altered mental status, nausea, and diarrhea. One week prior, she received an iron infusion, complicated by an allergic reaction requiring steroids. She subsequently developed progressive weight gain, edema, and confusion.

Vital Signs:

- BP 102/55 mmHg
- HR 93 bpm
- RR 16/min
- Temp 97.6°F
- SpO_2 100%

Examination:

- Disoriented
- Bilateral 2+ pedal edema
- Pulmonary crackles
- No pericardial friction rub or elevated JVP
- No overt signs of tamponade

Laboratory Findings:

- Sodium: 109 mEq/L (corrected 110 mEq/L)
- Potassium & bicarbonate: normal
- BUN: 28 mg/dL
- Creatinine: normal
- Hemoglobin: 11 g/dL, MCV: 86.7 fL
- Serum osmolality: 245 mOsm/kg

Submitted by Saurabh Pawar, MBBS

- Urine osmolality: 140 mOsm/kg

Imaging:

- ECG: normal sinus rhythm
- Chest X-ray: pulmonary vascular congestion, enlarged cardiac silhouette
- Echocardiography: large loculated pericardial effusion with fibrinous strands and early right ventricular diastolic collapse

She was admitted to ICU and started on hypertonic saline, with minimal sodium improvement (112 mEq/L in 6 hours). Emergent pericardiocentesis drained ~700 mL of serosanguinous fluid. Sodium increased to 119 mEq/L at 24 hours and 130 mEq/L at 48 hours, with improved mentation.

Rheumatologic evaluation confirmed an SLE flare (low C3/C4, anti-dsDNA >300 IU/mL). She was treated with methylprednisolone and hydroxychloroquine. Follow-up echocardiography one week later showed complete resolution of the effusion.

Discussion

Hyponatremia occurs in up to 65% of patients with cardiac tamponade and often improves after pericardial drainage [2]. The mechanism is primarily hemodynamic and neurohormonal: reduced cardiac filling decreases effective arterial blood volume, stimulating non-osmotic vasopressin release and water retention, resulting in dilutional hyponatremia [3,4].

Rapid sodium normalization following pericardiocentesis supports a causal relationship. Clinicians should consider pericardial effusion in symptomatic hyponatremia, even in the absence of classic tamponade signs. Management should address the underlying effusion and SLE flare; sodium supplementation alone may be insufficient [5].

Immunosuppressive therapy remains central to lupus-related pericardial disease, while pericardiocentesis is indicated in large effusions, hemodynamic compromise, or diagnostic uncertainty.

Conclusion

Symptomatic hyponatremia may be a reversible manifestation of hemodynamically significant pericardial effusion in SLE. Timely pericardiocentesis can rapidly correct

Submitted by Saurabh Pawar, MBBS

electrolyte and hemodynamic abnormalities and prevent progression to tamponade. Clinicians should maintain a high index of suspicion in SLE patients presenting with unexplained hyponatremia.

Learning Points

1. Symptomatic hyponatremia in SLE may indicate hemodynamically significant pericardial effusion.
2. Rapid improvement of hyponatremia following pericardiocentesis supports a causal relationship.
3. Echocardiography is essential for early detection, even without classic tamponade signs.
4. Management should address both effusion and underlying SLE flare; sodium replacement alone may be insufficient.

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Submitted by Saurabh Pawar, MBBS

Inverse Psoriasis Masquerading as Refractory Intertrigo: A Case Report

Sujatha Sekar M.B.B.S., Wayne Wayne Bryant Jr., MD, MS

Background:
Intertriginous rashes are frequently encountered in primary care and are commonly presumed to be infectious, most often candidal intertrigo. Inverse psoriasis, an uncommon variant of psoriasis, can closely mimic these presentations, leading to diagnostic delay and inappropriate treatment.

Objectives:
To highlight inverse psoriasis as an important noninfectious cause of persistent intertriginous rash and to emphasize the need for diagnostic reassessment when standard antifungal therapy fails, particularly in the presence of emerging inflammatory arthritis.

Methods:
We describe the clinical course of a 58-year-old woman presenting with a persistent erythematous rash involving the inframammary folds for over three months. Initial evaluation and management were conducted in the primary care setting, followed by diagnostic reassessment and specialty referral.

Results:
The rash was mildly pruritic and lacked maceration, fissuring, or satellite pustules. Initial treatment for presumed candidal intertrigo with topical and systemic antifungal therapy resulted in no improvement. The eruption subsequently progressed to involve the abdominal wall, lower back, and intergluteal cleft. Concurrently, the patient developed progressive inflammatory joint pain affecting multiple large joints. Given the lack of response to antifungal therapy, absence of infectious features, disease extension beyond flexural areas, and development of inflammatory arthritis, a punch biopsy was performed and was consistent with psoriasis. The joint manifestations were attributed to psoriatic arthritis. The patient was managed collaboratively with dermatology and rheumatology, resulting in clinical improvement with topical corticosteroids and systemic immunomodulatory therapy.

Conclusions:
Persistent intertriginous rashes unresponsive to standard antifungal treatment should prompt reconsideration of the diagnosis. Early recognition of inverse psoriasis and associated inflammatory arthritis is essential to avoid delays in appropriate therapy and referral, with important implications for improving patient outcomes in primary care practice.

Submitted by Sujatha Sekar, MBBS

Enhancing Procedural Training and Clinic Utilization Through a Resident-Driven Quality Improvement Initiative

Sujatha Sekar M.B.B.S., Lauren E. Gibson-Oliver, MD, MBA, FAAFP, Geeta Sakariya, MD, MPH, FAAFP

Background:
Office-based procedures are a core competency in Family Medicine training; however, resident procedural preparation and competence are often inconsistent due to fragmented educational resources, variable access to procedure clinics, and limited awareness of in-clinic procedural capacity. Inefficient internal referral workflows further contribute to underutilization of Family Medicine procedure services.

Objectives:
To improve resident procedural preparedness, assessed competence, and procedure clinic utilization through a resident-driven quality improvement initiative.

Methods:
This project was conducted in a Family Medicine residency continuity clinic and included two interventions. First, a standardized procedural curriculum was developed for common office based procedures, including indications, contraindications, required instruments, step-by-step technique guides, instructional videos, and Procedure Competency Assessment Tool (PCAT) forms aligned with ACGME requirements. The module was designed for resident review prior to scheduled procedure clinics. Second, internal referral workflows from affiliated neighborhood clinics were optimized using a standardized referral guide and a streamlined electronic referral pathway. Resident confidence was assessed using pre- and post-intervention surveys, procedural competence was evaluated using faculty-completed PCAT forms during observed procedures, and clinic utilization was measured by monthly referral volume and procedure counts.

Results:
The project is ongoing. Baseline data demonstrate variability in resident procedural confidence and low internal referral volume. SMART aims include a 25% increase in resident-reported procedural confidence, achievement of PCAT-defined competency in at least 80% of observed procedures, and a 30% increase in internal referrals within six months.

Conclusions:
A standardized procedural curriculum combined with optimized referral workflows is a feasible, resident-led approach to improving procedural education and clinic utilization in Family Medicine, with implications for enhancing resident competency and strengthening continuity based procedural care.

Submitted by Sujatha Sekar, MBBS

When “Recurrent UTIs” Aren’t Infections: A Case of Urachal Carcinoma Leading to Renal Compromise

Sujatha Sekar M.B.B.S., Ali Amjad M.B.B.S., Sol Basabe MD, Annapoorna Nair M.B.B.S., Stephen King MD

Background:
Urinary tract infections are commonly diagnosed and treated in family medicine. However, recurrent or persistent urinary symptoms may reflect underlying obstructive or malignant disease rather than infection, particularly in older adults.

Objectives:
To emphasize key red-flag features in recurrent urinary symptoms that warrant prompt diagnostic reassessment and imaging in the primary care setting.

Methods:
We present a 71-year-old woman with diabetes, hypertension, and overactive bladder who presented after a fall and was found to have leukocytosis, severe acute kidney injury, metabolic acidosis, and pyuria. She reported six months of abdominal pain, urinary urgency with incontinence, repeated treatment for urinary tract infections, and significant unintentional weight loss.

Results:
Initial evaluation was consistent with complicated urinary tract infection with sepsis and acute kidney injury. Computed tomography of the abdomen and pelvis revealed bilateral hydroureteronephrosis due to a heterogeneous mass at the anterior bladder dome with associated lymphadenopathy, concerning for a urachal lesion. Urology and nephrology were consulted, and urinary decompression resulted in partial improvement in renal function. Biopsy of the urachal mass and retrocaval lymph node demonstrated findings consistent with myeloid sarcoma in a background of necroinflammatory changes. The renal injury was determined to be multifactorial, including obstructive uropathy and septic acute tubular necrosis.

Conclusions:
In family medicine, failure of urinary symptoms to improve within 48–72 hours, particularly when accompanied by weight loss, abdominal pain, recurrent falls, or renal dysfunction, should prompt early imaging and specialist referral. Recognition of these red flags can reduce inappropriate antibiotic use, prevent diagnostic delay, and help avert irreversible renal injury.

Submitted by Sujatha Sekar, MBBS

What Does Radiology Education on X (Twitter) Look Like? A Descriptive Analysis of Content Types, Formats, and Engagement

Purpose:
To characterize radiology educational content on X over one year, focusing on post formats, teaching intent, media usage, and engagement patterns, to guide trainees to high-yield resources and inform content strategies.

Methods/Materials:
Thirty radiology educator accounts (>5,000 followers, ≥1 educational post/week) were included: personal educators (n=20), teaching channels (n=8), and organizations/journals (n=2). Original educational posts (cases, quizzes, pearls, reviews; excluding reposts/announcements) from January 2025–January 2026 were sampled. Approximately 300 posts were analyzed for format (single, thread, poll), media type, teaching intent (case-based, pearls, review, exam-oriented), and engagement metrics (likes, reposts, bookmarks, views) using descriptive statistics.

Results:
Case-based content predominated (68–82%), followed by pearls/pitfalls/signs (18–28%) and concept reviews (10–15%). Exam-oriented material was uncommon (<10%). Most posts were single posts with media (85%), almost exclusively image-based (95–100%). Personal educator accounts demonstrated higher per-post engagement (median likes 50–200; bookmarks 10–80) than organizations, which achieved higher views but lower interaction. Neuroradiology and emergency/trauma posts generated the highest engagement, while pediatric and MSK content showed consistent but lower interaction. Visual quizzes frequently exceeded 10,000–40,000 views.

Conclusions:
Radiology education on X is predominantly interactive, case-driven, and image-centric, with personal educators generating strong engagement. Organizations offer broader reach but less interaction. Gaps include limited exam-focused content and underrepresentation of subspecialties such as interventional radiology and breast imaging. X is well suited for case-based learning, with opportunities to expand structured board preparation.

Submitted by Shiva Singh, MBBS

Encircling Vessels, Constricted Pathways: Imaging Spectrum of Congenital Aortic Arch Anomalies

Background:

Congenital anomalies of the aortic arch encompass a wide spectrum, ranging from asymptomatic variants to vascular rings that encircle and compress the trachea and esophagus. They are broadly classified as:

1. **Right aortic arch anomalies** – including mirror-image branching, aberrant subclavian artery, and circumflex right arch.
2. **Left aortic arch anomalies** – such as aberrant right subclavian artery and circumflex left arch.
3. **Double aortic arch** – forming a complete vascular ring.
4. **Associated diverticula and ductal remnants** (e.g., diverticulum of Kommerell, ductus arteriosus/ligamentum arteriosum) that complete or accentuate the ring.
   Recognition of these anomalies is crucial, as their clinical significance depends on the degree of tracheoesophageal compromise. Cross-sectional imaging provides definitive anatomic delineation and demonstrates functional consequences.

Objective:

We present three representative cases of congenital aortic arch anomalies, illustrating the spectrum of airway and esophageal manifestations.

Case Summaries:

Case 1: Circumflex right arch with aberrant left subclavian artery from a diverticulum of Kommerell and left ductal ligament, producing focal tracheoesophageal compression with proximal esophageal dilatation.

Case 2: Double aortic arch with dominant right segment and atretic distal left segment, encircling the trachea and esophagus with symmetric narrowing.

Submitted by Shiva Singh, MBBS

Case 3: Right aortic arch with symptomatic compression of the esophagus and subtle leftward tracheal deviation , which was managed operatively.

Conclusion:

Congenital aortic arch anomalies of different types can variably affect airway and esophageal caliber. Imaging is essential not only for classification but also for evaluating functional impact, thereby guiding clinical management.

Submitted by Shiva Singh, MBBS

When Your Body Can't Decide: Dermatomyositis, Lupus, and Rheumatoid Arthritis in One

Santhosh Raja Thangaraj, MD, St. Bernards Medical Center, Internal Medicine Residency, Jonesboro, AR
Soumyasri Kambhatla, MD, IU Health Rheumatology, Carmel, IN

Background

Dermatomyositis is a rare autoimmune myopathy characterized by symmetrical weakness of proximal muscles and specific skin manifestations. Although overlap syndromes with other connective-tissue diseases can occur, the simultaneous occurrence of systemic lupus erythematosus (SLE), rheumatoid arthritis (RA), and MDA5-antibody-positive dermatomyositis (anti-MDA5 DM) is exceptionally uncommon. Such triple overlaps pose significant diagnostic and therapeutic challenges because of shared serological markers, varied clinical manifestations, and heightened risk of complications under immunosuppression.

Case Presentation:

A 30-year-old female with a history of nasal septal perforation from prior cocaine use presented with an acute onset of diffuse skin rash, fatigue, hair loss, oral ulcers, and polyarthritis.Skin biopsy revealed interface dermatitis consistent with cutaneous lupus erythematosus, and she was started on hydroxychloroquine and prednisone before referral to Rheumatology.

Based on clinical and serological findings, she was diagnosed with an overlap of SLE, RA, and anti-MDA5 DM—a rare combination.

Discussion

Overlap syndromes involving multiple connective tissue diseases are uncommon and often present significant diagnostic and therapeutic challenges. The coexistence of SLE, RA, and anti-MDA5 DM is exceedingly rare, with only isolated cases described in medical literature. Such overlap likely reflects shared autoimmune mechanisms, including dysregulated B- and T-cell activation, type I interferon pathway upregulation, and the presence of multiple autoantibodies with overlapping tissue targets.

Conclusion

This case underscores the importance of recognizing complex autoimmune overlap syndromes and tailoring therapy to address the unique combination of pathologies. Early multidisciplinary involvement—including rheumatology, dermatology, pulmonology, and infectious disease—can improve outcomes and reduce complications from both disease and treatment.

Submitted by Santhosh Raja Thangaraj, MD

Dysbiosis to Destruction: The Enigmatic Role of the Gut Microbiome in Rheumatoid Arthritis

Santhosh Raja Thangaraj, St. Bernards Medical Center, Internal Medicine Residency, Jonesboro, AR

Aniqa Raheem, St. Bernards Medical Center, Internal Medicine Residency, Jonesboro, AR

Background: Rheumatoid arthritis (RA) is a chronic systemic autoimmune disease characterized by synovial inflammation, autoantibody production, and progressive joint disfigurement. Although genetic susceptibility contributes to disease risk, environmental and mucosal factors are increasingly recognized as critical drivers of immune dysregulation. Among these, the gut microbiome has emerged as a central regulator of host immunity.

Objective: This review compiles current evidence on how the gut microbiome influences the development of RA, progression, and therapeutic response, with emphasis on underlying mechanisms and translational implications.

Methods: An extensive narrative review was conducted encompassing experimental, clinical, and translational studies examining gut microbiota composition, mucosal immune modulation, barrier function, metabolite signaling, and microbiome-targeted interventions in RA.

Results: Current evidence indicates significant gut dysbiosis in both early and established RA. Mechanistic pathways involve Th17 polarization induced by microbial antigens. Molecular mimicry between bacterial and host proteins promotes autoimmunity. Increased protein citrullination is facilitated by specific gut bacteria. Imbalances in short-chain fatty acids such as butyrate affect regulatory T cell function. Innate immune training is influenced by microbial products. There is metabolic reprogramming of immune cells in response to bacterial metabolites. Increased intestinal permeability enables systemic immune activation.

Conclusion: The gut microbiome shapes immune homeostasis and plausibly drives RA pathogenesis. Specific microbial signatures may dictate disease course and therapeutic outcomes, highlighting the microbiome as both a biomarker and modifiable target. Bridging translational and clinical research will accelerate precision microbiome-based approaches for risk prediction and intervention in RA, propelling novel immunomodulatory therapies.

Submitted by Santhosh Raja Thangaraj, MD

Persistent Pneumopericardium in a Neonate: A Management Challenge

Lemoine, Taylor, MD; Corayma, Hernandez, MD; Gatlin, Scott, MD; Almasri, Murad, MD

Background:
Neonatal pneumopericardium is a rare but potentially fatal condition that can progress to cardiac tamponade. It is most commonly associated with barotrauma related to positive pressure ventilation.

Objectives:
To describe a case of persistent neonatal pneumopericardium with tamponade physiology and to discuss management in the setting of presumed barotrauma from positive pressure ventilation.

Methods:
A post-term neonate was delivered at home and brought to the emergency department shortly after birth with hypoxemic respiratory failure. Following intubation at an outside hospital, chest radiography revealed pneumopericardium. After transfer, emergent pericardial drain placement was performed, and cardiology was consulted to evaluate pneumopericardium and candidacy for extracorporeal membrane oxygenation (ECMO).

Results:
The patient developed refractory hypoxemia and hypercapnia despite maximal ventilatory support, inhaled nitric oxide, and multiple vasoactive agents, necessitating initiation of veno-arterial ECMO. While intubated, recurrent air accumulation occurred in the pericardial space despite drainage. Flexible bronchoscopy demonstrated no airway injury; however, the patient continued to experience intermittent episodes of air leak. The patient was extubated while remaining on ECMO to allow airway rest, after which pneumopericardium rapidly resolved without further reaccumulation. The patient was subsequently reintubated, gradually weaned from ECMO, and successfully decannulated.

Conclusions:
This case illustrates the diagnostic and management challenges of neonatal pneumopericardium when the underlying mechanism is uncertain. Early pericardial decompression, minimization of positive pressure ventilation, and ECMO-supported airway rest may facilitate resolution and prevent recurrence.

Submitted by Taylor Lemoine, MD

Title: **A Resident-Designed Speaker Instruction Packet to Improve Relevance and Engagement in Family Medicine Didactics**

Tatiana Torres Costa Lino, MD; Nicolas-Nadim Ghanem, MD; Diorella Lopez-Gonzalez, MD; Lauren Gibson-Oliver, MD, MBA, FAAP; Wayne Bryant, MD.

Background:
Guest lecturers play a role in family medicine residency didactics; however, subspecialty-led sessions often emphasize specialty-specific content misaligned with primary care needs. Educational theory supports aligning instruction with learner context and active learning, yet few structured tools orient guest speakers to family medicine–specific priorities.

Objectives:
To develop and pilot a resident-designed tool to improve the relevance and engagement of family medicine residency didactics.

Methods:
Guided by resident focus group feedback and faculty mentorship, a resident-led committee developed a Speaker Instruction Packet emphasizing outpatient management, pre-referral care, key diagnoses, and interactive teaching. The packet was piloted at the campus and distributed to 23 guest speakers, including 17 subspecialists. Post-presentation surveys assessed guide usefulness and impact, with descriptive analyses of relevance, clarity, applicability, and interactivity by specialty.

Results:
We anticipate most speakers will report using the packet and finding it helpful in tailoring content to a family medicine audience through improved outpatient relevance, clearer take-home points, and increased interactivity. Subspecialist speakers are expected to report greater confidence in meeting learner needs, while residents report improved engagement and applicability to ambulatory practice. Qualitative feedback is expected to highlight improved organization and relevance.

Conclusions:
This resident-designed, low-resource Speaker Instruction Packet standardizes expectations, improves didactic consistency, aligns with ACGME requirements, and is easily scalable across residency programs, grand rounds, and CME. By fostering clearer communication and shared priorities between family medicine and subspecialty educators, this initiative promotes interdisciplinary collaboration and strengthens primary care training across Arkansas.

Submitted by Tatiana Torres Costa Lino, MD

Financially Fit: A Structured Curriculum to Improve Financial Literacy and Confidence in Family Medicine Residents

Tatiana Torres Costa Lino, MD; Kanna Lewis, PhD; Maria de Sol Basabe, MD; Lauren Gibson-Oliver, MD; Wayne Bryant, MD

Background
Financial wellness is a critical yet under-addressed component of physician well-being. Limited financial education leaves many residents unprepared for financial protection, student loan and contract management, and wealth building, contributing to stress and burnout. This quality improvement project implemented a resident-led, structured financial literacy curriculum and evaluated the impact on residents' financial confidence, stress, and knowledge.

Methods
Family Medicine residents (PGY 1-3) completed anonymous pre- and post-intervention surveys using 5-point Likert scales. Fifteen items assessed knowledge on budgeting, student loan repayment, investing, retirement, contract negotiation and benefits, and overall stress and confidence. Knowledge items were grouped into four domains: Foundation, Wealth Building, Career and Loan, and Protection and aggregated domain scores were calculated. Pre-survey findings informed a five-session curriculum integrated into existing didactics over five months. Pre-post responses were analyzed using paired t-tests.

Results
Overall, participants (n=19) rated the intervention useful and relevant (mean score 4.2/5). Among matched respondents (n=18), responses generally improved following the intervention, but without statistical significance. The largest item-level change was in confidence (pre 2.79 vs post 3.63; mean difference 0.84; $p = 0.011$). Stress measures showed minimal change (all $p > 0.5$). Among knowledge items, only contract negotiation improved significantly ($p=0.030$). At the domain level, the Career and Wealth-Building improved significantly ($p = 0.030$), while others showed nonsignificant increases.

Conclusion
A structured, resident-led financial literacy curriculum was associated with significant improvement in financial confidence and career-related financial skills. Integrating practical financial education into residency training is feasible and may enhance preparedness for post-training practice.

Submitted by Tatiana Torres Costa Lino, MD

Levamisole-Adulterated Cocaine–Associated Vasculopathy/Vasculitis in a 73-Year-Old Woman: Diagnostic Challenges in Primary Care

Tatiana Torres Costa Lino, MD; Astrid L. Linares, MD; Renée Peterkin-McCalman, MD; *Wayne Bryant Jr., MD, MS*

Background:
Levamisole is a common adulterant in cocaine and can cause a distinct vasculitis characterized by retiform purpura, necrotic skin lesions, and characteristic but often atypical antineutrophil cytoplasmic antibody (ANCA) patterns. Most reported cases involve younger adults (median age 44 years) and are identified in emergency or specialty settings. To date, no published cases describe this condition in the geriatric population or its initial diagnosis in a primary care setting.

Objective:
To report the first identified case of levamisole-induced vasculitis in an elderly patient (age ≥65 years) diagnosed in primary care and to highlight the importance of unbiased substance-use screening in older adults.

Methods:
We describe a case of an elderly patient with vasculopathy/vasculitis from levamisole-laced cocaine diagnosed and initially managed in a family medicine clinic.

Results:
A 73-year-old woman with tobacco and cocaine use disorder presented with progressive bilateral lower-extremity retiform purpura. Cocaine was primarily used by sprinkling it onto marijuana joints. Laboratory evaluation revealed negative antinuclear antibodies, ANCA, and myeloperoxidase antibodies, with elevated proteinase-3 antibodies. Clinical presentation, serologic findings, and substance-use history supported the diagnosis of levamisole-associated vasculitis. Management included cocaine cessation counseling, topical corticosteroids, and an oral steroid taper, with Rheumatology referral for continued care.

Conclusion:
This represents the first reported case of levamisole-induced vasculitis in an elderly patient and the first identified in a primary care setting. Recognition of this atypical presentation may reduce diagnostic error, prevent unnecessary immunosuppression, and reinforce the need for nonjudgmental substance-use assessment in geriatric patients.

Submitted by Tatiana Torres Costa Lino, MD

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Submitted by Tatiana Torres Costa Lino, MD

Title: Wellness Calendar: An Innovative Strategy to Develop and Implement a Multi-Campus Wellness Plan

Tatiana Torres Costa Lino, MD; Carlos Quevedo, MD; James C Rule, LCSW; Lauren Gibson-Oliver, MD, MBA, FAAP; Diane M Jarrett, Ed.D, M.A, Shashank Kraleti, MD, FAAP

Background
Burnout and workplace stress remain significant challenges in medical residencies, highlighting the need for sustainable, system-level wellness interventions. In the 2022–2023 ACGME Resident Survey, our residency program scored below national benchmarks in key well-being domains, with residents reporting fatigue and difficulty recovering after work.

Objectives
To develop, implement, and evaluate a resident- and faculty-led Wellness Calendar as a scalable strategy to improve well-being, foster connection, and promote supportive culture across a multi-campus family medicine training program.

Methods
A resident–faculty-led Wellness Calendar was developed and piloted at the main campus, featuring monthly, nonclinical social activities. Outcomes were evaluated using descriptive pre–post comparisons of ACGME Resident Survey well-being domains from 2023 to 2025. Following improvement, the model was expanded statewide using a customizable, low-barrier framework guided by survey data and tailored to site-specific needs.

Results
After two years, all previously underperforming ACGME well-being domains improved, including supportive environment (+15%) and respect at work (+12%). Recovery measures showed substantial gains, with reduced post-work recovery time (+53%) and reduced feelings of being worn out (+42%). These findings suggest cultural change, with statewide feedback indicating improved morale, interprofessional connection, and psychological safety.

Conclusions
A resident- and faculty-led Wellness Calendar is a low-cost, scalable approach to promoting resident well-being. The model provides customizable, low-barrier activities while preserving site-specific autonomy informed by local data. Ongoing evaluation aligns with ACGME expectations and offers a practical framework for embedding wellness across diverse training environments.

Submitted by Tatiana Torres Costa Lino, MD

Association Between GLP-1 Receptor Agonist Exposure and Acute Pancreatitis Risk in Patients with Cholelithiasis: A Real World Cohort Study

Urveesh Sharma MBBS, **Adalberto Guzman MD, Yash Shah MD**

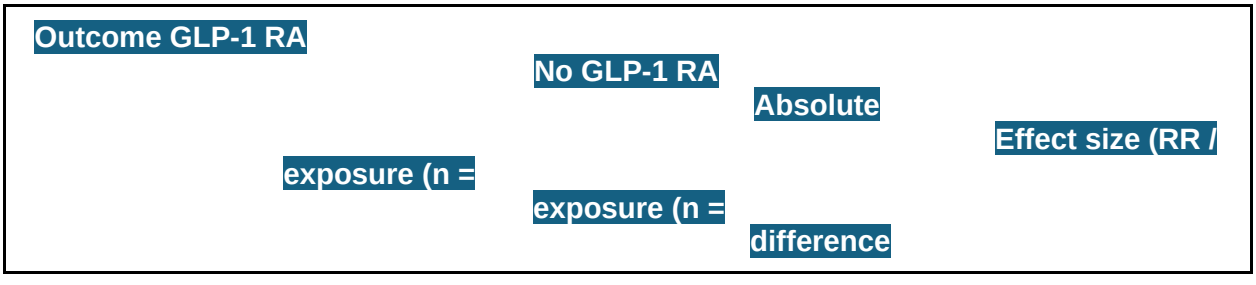
Background:
Glucagon-like peptide-1 receptor agonists (GLP-1 RAs) are widely used for type 2 diabetes and obesity. Prior randomized trials and observational studies have evaluated pancreatitis risk following GLP-1 RA use in general and diabetic populations, with largely reassuring findings. However, these studies have not focused on patients with gallstone disease, who account for approximately 35–40% of acute pancreatitis cases and have a substantially elevated baseline risk. Additionally, GLP-1 RAs have been associated with gallbladder-related adverse events, raising concern for pancreatitis risk in this vulnerable subgroup. Real-world data addressing this gap remain limited. We evaluated the association between GLP-1 RA exposure and acute pancreatitis among patients with cholelithiasis.

Methods:
We conducted a retrospective cohort study using the TriNetX Global Collaborative Network. Adults (≥18 years) with documented cholelithiasis were identified. Patients with GLP-1 RA exposure were compared with cholelithiasis patients without GLP-1 RA use. Propensity score matching (1:1) was performed for age, sex, race, and ethnicity. Patients with pancreatitis prior to the analysis window were excluded. Outcomes occurring after the index event were assessed. The primary outcome was incident acute pancreatitis (ICD-10 K85). Risk differences (RD) and risk ratios (RR) were calculated.

Results:
After matching, 160,333 patients were included in each cohort. Acute pancreatitis occurred in 2,069 patients (1.4%) in the GLP-1 RA cohort and 2,478 patients (1.6%) in the non–GLP-1 cohort (RD −0.3%, 95% CI −0.3 to −0.2). GLP-1 RA exposure was associated with a lower risk of acute pancreatitis (RR 0.84, 95% CI 0.79–0.89; P<0.001).

Conclusion:
In this large real-world cohort of patients with cholelithiasis, GLP-1 RA exposure was associated with a modestly lower risk of acute pancreatitis. These findings extend prior pancreatitis safety data for GLP-1 RAs to a high-risk gallstone population and may inform clinical decision-making.

Table. GLP-1 Receptor Agonist Exposure and Acute Pancreatitis Risk in Patients with Cholelithiasis



Submitted by Urveesh Sharma, MBBS

	160,333)	160,333)		95 % CI)
Acute pancreatitis	1.38%	1.64%	-0.30%	RR: 0.84, 95% CI (0.79-0.89)

All values re*lect 1:1 propensity-matched cohorts based on age, sex, race, and ethnicity.

Submitted by Urveesh Sharma, MBBS

ABSTRACT

A Case Report of Isolated Left Upper Extremity Weakness Due To A Paradoxical Embolus: A Rare Manifestation Of A Patent Foramen Ovale And Pulmonary Embolus

Veronica Aletum, MD, PGY 2, Resident[1]

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Background

Paradoxical embolism happens when a venous thrombus enters the arterial circulation through a shunt such as a patent foramen ovale (PFO). An atrial septal aneurysm (ASA) is an independent risk factor, particularly when associated with a PFO. Paradoxical embolism is an important cause of embolic stroke of undetermined source and should be considered when stroke-like symptoms occur with inconclusive findings.

Objectives

To highlight paradoxical embolism as a cause of concurrent arterial thromboembolic events, even in the absence of deep venous thrombosis (DVT).

Methods

This is the report of a 60-year-old man with uncontrolled hypertension and no prior cardiovascular or neurological disease, who presented with intermittent left upper extremity (LUE) numbness. Diagnostic evaluation included neurological examination, brain magnetic resonance imaging, computed tomography angiography of the head neck and chest, venous Doppler ultrasound, transthoracic echocardiography with bubble study, transesophageal echocardiography, and left upper extremity angiography.

Results

Brain imaging revealed a left posterior cerebral artery territory infarct. CT angiography showed distal left P2 segment occlusion and bilateral pulmonary embolism. Venous Doppler ultrasound was negative for DVT. An echo bubble study showed right heart strain, and a trans-esophageal echocardiogram confirmed ASA with PFO. Angiogram of the LUE showed an embolus within the LUE subclavian artery through the brachial artery giving rise to the possibility of a paradoxical embolus. Patient underwent LUE thrombectomy and received antihypertensive therapy and anticoagulation.

Conclusions

Paradoxical embolism should be considered in stroke-like presentations with concurrent arterial thrombosis to enable diagnosis and prevention.

Submitted by Veronica Aletum, MD

Varenya Nallur, M.D.
Lindsey Wilbanks, M.D.
University of Arkansas for Medical Sciences
Poster Abstract Submission

Conditional Release Outcomes in Arkansas:
Evaluating Reintegration and Recidivism Under ACT 911

BACKGROUND:
Conditional release (CR) provides a pathway for individuals found NGRI to reintegrate into society under mental health and court supervision. Arkansas's Act 911 authorizes CR under court-ordered conditions, including treatment adherence, sobriety, and approved housing, for up to five years. Noncompliance may result in revocation, renewed supervision, psychiatric rehospitalization, or incarceration.

OBJECTIVES:
1. Describe 10-year trends in a CR program, including original charges, revocation rates, and supervision duration.
2. Compare outcomes between individuals who completed CR and those who experienced revocation.
3. Compare CR supervision lengths with expected incarceration periods for similar offenses.

METHODS:
We conducted a 10-year retrospective analysis of de-identified patient data from the conditional release program. Trends in charges, revocation rates, and program duration were analyzed, and individuals who completed CR were compared with those who experienced revocation. CR supervision lengths were also compared with typical incarceration periods for similar offenses.

RESULTS:
1. Most NGRI acquittees (86%) completed Arkansas's Act 911 CR program within five years.
2. A subset of revoked individuals (14%) experienced at least one revocation, remaining under supervision beyond expected incarceration for similar offenses.
3. We found no difference between those who completed and those who experienced revocation, except for Aggravated Assault being statistically more common amongst those who completed CR.

CONCLUSION:
Although generally effective, Act 911 does not address social determinants of health that may contribute to noncompliance, revocation, and prolonged forensic oversight. These outcomes may reflect systemic barriers rather than clinical deterioration; identifying at-risk individuals could allow clinicians to anticipate revocation risk and tailor CR more effectively.

Submitted by Varenya Nallur, MD

Impella-Assisted Ventricular Septal Defect Repair in an Elder Patient with Takotsubo Cardiomyopathy: A Case Report

Yuqi Cui[1,2], M.D. Ph.D., Ahmed S. Ahmed[1], FACC, FSCAI, Jay K Bhama[1] MD, FACS, FACC, FACC, and Maximiliano Arroyo[1] MD, FACC , FSCAI *

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Background: Takotsubo cardiomyopathy (TTC), often referred to as stress-induced cardiomyopathy, is a transient cardiac syndrome that mimics acute coronary syndrome but usually without obstructive coronary artery disease (CAD). In rare cases, it can lead to complications such as ventricular septal defect (VSD), requiring complex hemodynamic and surgical interventions. This report presents the case of an 83-year-old woman with TTC complicated by VSD, highlighting the role of Impella devices in stabilizing hemodynamics and supporting surgical repair.

Case: An 83-year-old woman with a history of CAD, diabetes, hypertension, paroxysmal atrial fibrillation, and hyperlipidemia, presented with acute chest pain, dyspnea, and diaphoresis. Her initial electrocardiogram (EKG) was concerning for ST-elevation myocardial infarction (STEMI). However, coronary angiography revealed nonocclusive CAD, and she was diagnosed with Takotsubo cardiomyopathy. Transthoracic echocardiography confirmed the presence of a ventricular septal defect (VSD) with left-to-right shunting and reduced ejection fraction (30-35%).

Decision-making: To stabilize her hemodynamics, a right and left Impella device was inserted. The patient underwent urgent VSD repair along with a limited maze procedure for atrial fibrillation. Postoperatively, the patient was closely monitored in the ICU with the Impella devices providing circulatory support. Throughout her recovery, the Impella-assisted support allowed gradual weaning from vasopressors and ventilator support, though the patient experienced episodes of hypotension, acute kidney injury, and volume overload, requiring dialysis. The right Impella was removed on postoperative day 13, and the left Impella continued to provide support during her recovery.This case highlights the utility of Impella devices in managing acute hemodynamic instability due to mechanical complications of Takotsubo cardiomyopathy, particularly in the setting of VSD. The successful use of Impella provided vital circulatory support, facilitating definitive surgical intervention and contributing to the patient's eventual stabilization. Impella-assisted support is an invaluable tool for improving outcomes in high-risk patients undergoing complex cardiac surgery, allowing time for the myocardium to recover while ensuring adequate tissue perfusion.

Conclusion: Impella-assisted VSD repair in the context of Takotsubo cardiomyopathy

presents a life-saving intervention in patients with severe cardiac decompensation. This case underscores the importance of early mechanical circulatory support to stabilize high-risk patients and provide a bridge to surgical repair, resulting in favorable outcomes even in advanced age.

Submitted by Yuqi Cui, MD

Background:
Pediatric sarcoidosis is a rare noninfectious granulomatous disease with highly variable clinical presentations, often mimicking infection or malignancy. Diagnosis is challenging due to the lack of specific diagnostic tests, particularly when multiorgan involvement and metabolic complications are present.

Objectives:
To describe a rare case of pediatric sarcoidosis presenting with severe hypercalcemia and acute kidney injury, highlighting the diagnostic approach and clinical implications.

Methods:
We report the case of a 16-year-old girl with well-controlled type 1 diabetes mellitus who presented with 10 days of nausea, vomiting, and generalized abdominal pain. Laboratory evaluation revealed severe hypercalcemia and acute kidney injury with elevated 1,25-dihydroxyvitamin D and angiotensin-converting enzyme levels, suppressed parathyroid hormone, and normal parathyroid hormone–related peptide. An extensive infectious evaluation was negative. Imaging studies were performed to evaluate for malignancy or granulomatous disease.

Results:
Imaging demonstrated generalized lymphadenopathy extending from cervical to iliac regions, parotid gland enlargement, pulmonary and splenic nodules, and a lytic sternal lesion. Lymph node biopsy revealed noncaseating granulomas consistent with sarcoidosis. Treatment with systemic corticosteroids and steroid-sparing immunosuppressive therapy resulted in normalization of serum calcium levels and resolution of symptoms.

Conclusions:
This case illustrates a rare, high-risk presentation of pediatric sarcoidosis with multiorgan involvement and severe hypercalcemia. It underscores the importance of early biopsy confirmation and multidisciplinary evaluation to distinguish sarcoidosis from infection or malignancy and to guide timely management.

Submitted by Yuxin Wang, MD

A STEMI Activation Without Chest Pain: Takotsubo Cardiomyopathy Triggered by Urologic Hemorrhage and Hemorrhagic Shock in a Quadriplegic Male

Authors: Zhengzhuo Li MD. CRHS IM PGY-2; Ahmed AlAizari DO CRHS IM PGY-1; Kimberlie Seger DO CRHS IM PGY-3; Hacioglu, Yalcin MD CRHS Cardiologist.

Background:
Takotsubo cardiomyopathy most commonly affects postmenopausal women and can closely mimic acute coronary syndrome. Diagnosis may be particularly challenging in patients unable to perceive or report ischemic symptoms, such as those with spinal cord injury.

Case:
A 57-year-old man with traumatic quadriplegia resulting in impaired sensation below the upper chest, type 2 diabetes mellitus, hypertension, tobacco use, chronic indwelling Foley catheter for neurogenic bladder, and history of venous thromboembolism on apixaban presented with acute gross hematuria following Foley catheter exchange. In the emergency department, he developed marked tachycardia initially concerning for atrial flutter and received diltiazem with improvement in rate. Repeat electrocardiogram demonstrated lateral ST-segment elevations in leads I and aVL. The patient denied chest pain or dyspnea. High-sensitivity troponin T was elevated to 878 ng/L. Emergent coronary angiography revealed mild non-obstructive coronary artery disease, including a 30% mid-left anterior descending lesion, and an anomalous left circumflex artery arising from the right coronary cusp with a retroaortic course, without evidence of acute plaque rupture or occlusion. Left ventriculography demonstrated apical ballooning with an estimated ejection fraction of 30–35%. Transthoracic echocardiography confirmed hypokinesis of the mid and apical segments with reduced left ventricular systolic function (ejection fraction 30–35%), normal right ventricular function, no significant valvular abnormalities, and a small localized pericardial effusion without tamponade physiology. The hospital course was complicated by traumatic catheterization with false passage, persistent hematuria, acute blood loss anemia, hypotension requiring norepinephrine support, and acute kidney injury. Guideline-directed medical therapy for heart failure was limited by hypotension, low-dose metoprolol succinate was resumed prior to discharge. Anticoagulation was held due to active bleeding, and close outpatient cardiology follow-up was arranged.

Conclusion:
This case illustrates Takotsubo cardiomyopathy presenting as painless lateral ST-elevation myocardial infarction activation with significant troponinemia in a male patient with traumatic quadriplegia. Impaired sensory perception masked classic ischemic symptoms, while acute urologic hemorrhage and hemorrhagic shock likely served as the precipitating physical stressor. Clinicians should maintain a high index of suspicion for acute coronary syndrome mimics in patients with sensory deficits and recognize the role of severe physiologic stress in triggering Takotsubo cardiomyopathy.

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