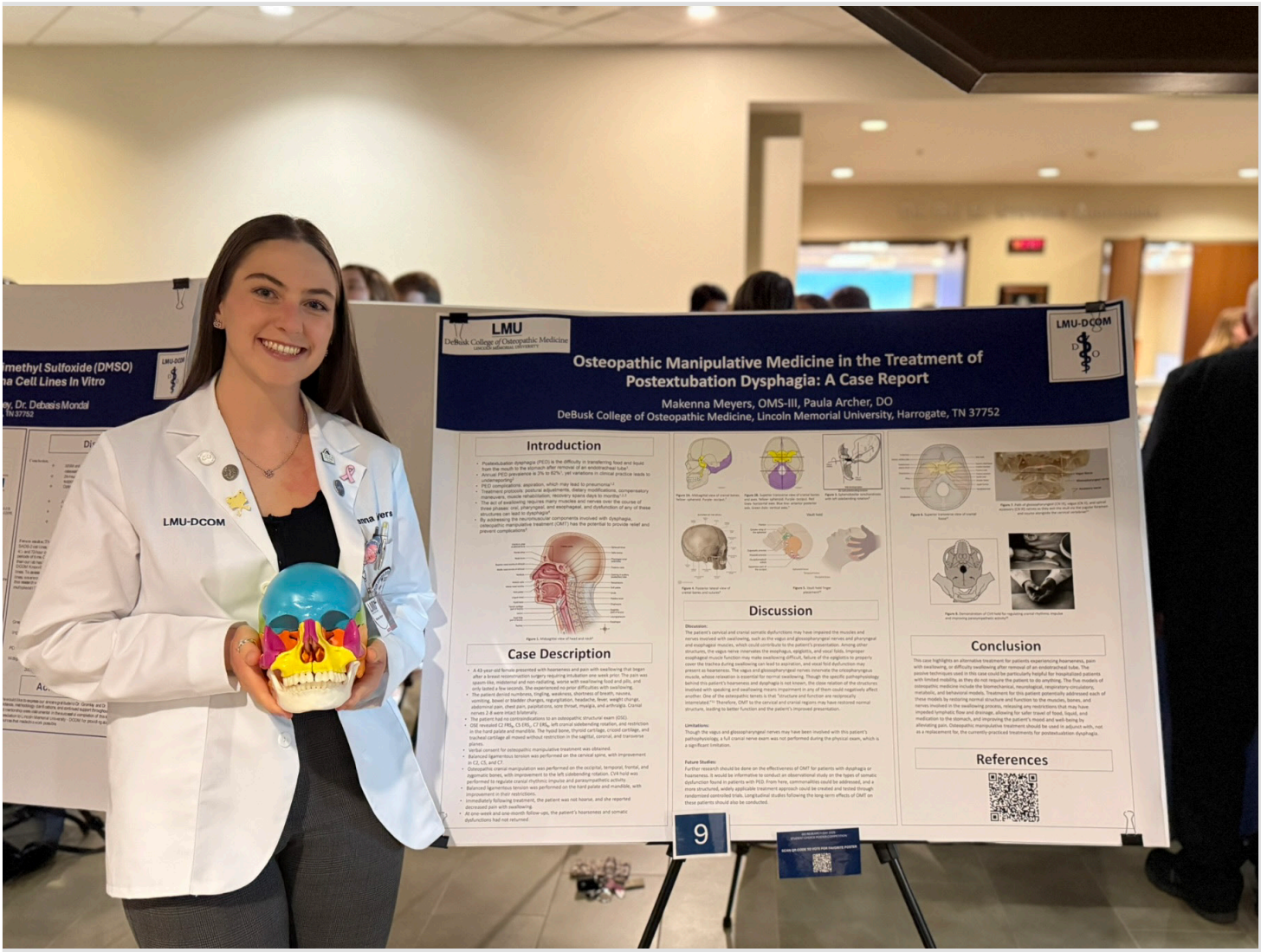
LMU | DeBusk College of Osteopathic Medicine
LINCOLN MEMORIAL UNIVERSITY

10th Annual Essentials of Clinical Medicine CME Conference and Poster Competition

June 12-14, 2026



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Welcome to the Poster Competition

LMU DCOM's 10th Annual Essentials of Clinical Medicine CME Conference and Poster Competition

June 12 – 14, 2026

Poster Sessions: June 12 from 5 – 7 pm and June 13 from 12 – 1 pm

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Welcome to the 2026 Poster Competition. This weekend, we celebrate the exceptional scholarly achievements of our academic medical community—a testament to the dedication and intellectual rigor of our LMU-DCOM students, residents, faculty, staff, and preceptors.

This year's competition is particularly noteworthy. From a field of nearly 30 submissions, we are proud to feature 25 accepted abstracts that demonstrate remarkable breadth and depth.

The range of work on display is impressive. You will see foundational insights from the bench—such as novel work on cardiomyocyte protection and immune-mediated graft survival—alongside critical clinical studies that address the unique challenges of our region, including 'Food is Medicine' initiatives for diabetes in Appalachia and rural health disparities. We also have a series of rare and complex clinical case reports, ranging from unique manifestations of ROHHAD syndrome and Shiitake dermatitis to innovative surgical decision-making in orthopedic and cardiovascular cases.

Each of these posters represents countless hours of meticulous investigation and thoughtful analysis. They span diverse specialties and methodologies, reflecting the comprehensive nature of modern medical education and our commitment to evidence-based practice.

As you move through the exhibition, I encourage you to engage with our presenters actively. Challenge them on their methodologies, discuss their findings, and consider the clinical implications of their work. These posters represent not only current contributions to medical knowledge but also the future of medicine and the legacy of excellence that defines LMU-DCOM.

Thank you for being an integral part of this scholarly tradition. Your participation fuels the collaborative spirit that drives innovation and, ultimately, benefits the communities we serve.

Sincerely,

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Abstracts

Unusual Simultaneous Presentation of Maturity-Onset Diabetes of the Young Type 1 in Siblings

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Introduction: Maturity Onset Diabetes of the Young (MODY) is a rare monogenic form of diabetes mellitus that accounts for ~1-6% diabetes diagnoses. MODY is often misdiagnosed at the time of presentation as Type 1 Diabetes Mellitus (T1DM) or Type 2 (T2DM). MODY1, a pathogenic variant representing a mutation of the HNF4A gene on chromosome 20, accounts for <10% of identified MODY diagnoses and is inherited in an autosomal dominant fashion. The exact mechanism of hyperglycemia in the HNF4A mutation is poorly understood, but it is thought to be a defect in gene expression that causes a critical effect on insulin secretion. MODY1 treatment involves use of sulfonylureas to increase insulin secretion.

Case Series: A previously healthy non-obese 11-year-old female presented to urgent care after a random home glucose measurement of 419 mg/dl on her mother's glucometer. Urgent care confirmed hyperglycemia at 396 mg/dl with glucosuria. She was sent to the ER, where she was found to have persistent hyperglycemia, glucosuria, elevated hemoglobin A1c (12.2%), elevated insulin level (10.5 IU/mL), and no ketonuria. Interestingly, the patient's non-obese 18-year-old maternal half-brother, who had accompanied the patient to the urgent care, had noted headache, nausea, and abdominal pain for the previous two weeks. He was evaluated and was found to be hyperglycemic. He was also sent to the ER, where he had a blood glucose of 299 mg/dL, glucosuria, elevated A1c (8.3%), elevated insulin level (14.7 IU/mL), and no ketonuria. Endocrinology was consulted. Despite the most likely diagnosis of T1DM in children this age, an alternative diagnosis of MODY was suspected due to the simultaneous presentation of the siblings and their relatively stable clinical picture. Based on this suspicion, both received a low dose of long-acting insulin (Glargine) and were sent home to follow up with endocrinology the following day. At follow-up, diabetes autoimmune panels were ordered for both siblings. Further questioning revealed a significant family history of apparent type 2 diabetes in the mother since her early 20s, and in the maternal grandfather. The patients were kept on the same dose of Glargine with no fast-acting insulin coverage. They returned three weeks later. The 18-year-old reported that he could not continue insulin due to low blood sugars, and the 11-year-old continued without issue. Diabetes autoimmune panels were negative for both siblings, so the patients were referred for genetic counseling and testing. Both siblings were positive for HNF4A autosomal dominant variant c.340 C>T p.(R114W), consistent with a MODY1 diagnosis. Both patients transitioned from insulin to glyburide (ideal therapy).

Conclusion: Although T1DM is the most likely diagnosis in children presenting with hyperglycemia, one must maintain a high index of suspicion of other less common etiologies. The early recognition and diagnosis of MODY is necessary to ensure appropriate management.

Keywords: Pediatrics, Diabetes, MODY

Protective Effects of Cyanidin-3-Glucoside on Doxorubicin-Induced Differentiated Human AC16 Cardiomyocytes.

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[*]*DCOM Research Scholar 2025 – 2026*

Introduction: Doxorubicin (Dox) is an anthracycline chemotherapeutic limited by dose-dependent cardiotoxicity, partly mediated by oxidative stress and dysregulation of cardiomyocyte survival pathways. AC16 human cardiomyocytes, an immortalized ventricular cell line capable of differentiation, provide a model to investigate cardioprotective mechanisms under controlled conditions. Nuclear factor erythroid 2–related factor 2 (Nrf2) is a transcription factor that orchestrates antioxidant and cytoprotective gene expression, including GPX4, NQO1, ferroportin (FPN1), and anti-apoptotic Bcl-2, and its activation mitigates Dox-induced cardiac injury in preclinical models. Cyanidin-3-glucoside (C3G), a dietary anthocyanin, has been shown to activate Nrf2-dependent signaling and enhance cellular antioxidant defenses in cardiovascular and endothelial systems. This study evaluates differentiated AC16 cells to test C3G-mediated cardio-protection against Dox, with a focus on viability outcomes and Nrf2-pathway gene expression.

Methods: AC16 cells were expanded in DMEM: F12 with 12.5% fetal bovine serum and 1% penicillin/streptomycin, then switched at approximately 70% confluence to differentiation media containing 5% horse serum and 5% ITS to induce differentiation to a more mature cardiomyocyte-like phenotype. Differentiation status at 2, 7, and 15 days was assessed morphologically and confirmed by RT-qPCR. Seven-day differentiated AC16 cells were serum-starved for 24 hours, then exposed for 48 hours to Dox, C3G, or combinations thereof; viability was quantified by XTT assay with spectrophotometric readouts at 450 and 660 nm. One-way ANOVA with Dunnett and Tukey post hoc tests ($\alpha = 0.05$) was used to compare treatment groups to Dox controls; Nrf2-pathway targets (NFE2L2, GPX4, NQO1, BCL2, FPN1) will be quantified by RT-qPCR in the same treatment conditions.

Results: AC16 differentiation produced clear morphological changes and significant transcriptional shifts, with HK2 expression showing statistically significant differences between undifferentiated and 7-day differentiated cells, while BMP2 showed qualitative, but not statistically significant, upregulation consistent with a more mature cardiomyocyte phenotype. In viability assays, Dox treatment at 1 µM and 2 µM significantly reduced XTT signal by ANOVA ($p = 0.003$ and $p = 0.034$, respectively), confirming effective cytotoxic dosing in differentiated AC16 cells. However, across the C3G and Dox+C3G treatment conditions tested, post hoc Dunnett and Tukey analyses did not detect statistically significant rescue of viability relative to the corresponding Dox-only controls, suggesting that under the tested dosing and timing, C3G conferred at most modest protection. Nrf2-pathway RT-qPCR in progress and will be available at the time of presentation.

Conclusions: Differentiated AC16 cardiomyocytes represent a feasible in vitro platform for modeling Dox-induced cardiotoxicity and for testing nutraceutical cardio-protectants such as C3G. Preliminary viability data demonstrate reproducible Dox toxicity but no statistically significant C3G-mediated rescue under tested protocols, indicating a need to optimize concentration, timing, or differentiation state to enhance detection of cardioprotective effects. Nrf2-pathway gene expression data will clarify whether C3G engages canonical antioxidant and survival signaling in this human cardiomyocyte model, even in the absence of strong viability rescue. These findings will inform rational redesign of dosing strategies and target selection for future cardio-protection studies in AC16 cells and related preclinical systems.

Keywords: Cardiac, Doxorubicin, Nutraceuticals

Additional Unmet Needs of Street Medicine Patients in Knoxville, TN.

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2025 DeBusk Summer Scholar Award

Introduction: The rise of street medicine over the past three decades has coincided with an unprecedented rise in People Experiencing Homelessness (PEH). PEH are a vulnerable population that experiences higher rates of all-cause mortality and increased infectious disease prevalence, mental health conditions, cardiovascular and respiratory conditions than their housed counterparts. The purpose of this study was to assess met and unmet needs during patient encounters.

Methods: This retrospective chart review used de-identified data from Knox Street Medicine Outreach, an organization providing street medicine care, between June 2024 and December 2025. Eligible encounters required documentation of a medical evaluation and/or a patient-reported medical complaint. Purely "social outreach" and needs that have been addressed by program expansion were excluded. For encounters where more than one need was identified, each was recorded independently. Needs were classified into one of the six following categories: Wound Management, Laboratory Testing, Specialist Referral, Medications, Diagnostic Imaging, General Need.

Results: This retrospective chart review included 665 unique visits from 475 patients with an average of 1.4 visits per patient. The organization demonstrated a marked improvement in its ability to address patient needs between 2024 and 2025 (57% met vs 75% met). Wound care represented the greatest proportion of unmet needs in both years (41% vs 33%) followed by Laboratory Studies (15% vs 18%). Specialist referrals showed the largest percentage change increase over the two years (12 % vs 22%). Unmet medication needs saw the largest decrease (18% vs 7%).

Conclusion: This study demonstrated that organization growth in funding, partnerships, and infrastructure increased its ability to meet the needs of PEH and provided insights into broader healthcare system gaps affecting PEH in the Knoxville area. Further research is needed to evaluate the long-term impact of street medicine interventions on patient outcomes.

Keywords: Street Medicine, Persons Experiencing Homelessness, Healthcare Access

Harmine Nanoemulsion-Mediated Immune Preconditioning Elicits Durable Protection from Rejection of Allogeneic Islet Grafts in the Anterior Chamber of the Eye.

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Introduction: Islet or stem cell-derived β-cell (SC-β) transplantation offers a promising therapy for patients with type 1 diabetes, but its success is severely limited by early inflammatory events and immune-mediated loss of transplanted tissue. Strategies that reduce antigen shedding and early inflammatory signaling are critical to prolonging graft survival. Despite advances in immunosuppression, most systemic agents utilized carry significant toxicity, particularly problematic because patients with diabetes already exhibit immune dysfunction, making lifelong systemic suppression both risky and detrimental to graft health. These challenges create a critical need for non-invasive strategies that can modulate inflammation before transplant or in lower doses at the transplant site, thereby reducing early graft loss, and potentially eliminating or reducing reliance on chronic systemic immunosuppression.

Objectives: This study aimed to formulate and test nanoemulsions made of Harmine, a naturally occurring alkaloid that has demonstrated potential in β-cell proliferation and anti-inflammatory properties in models of neural inflammation. By improving bioavailability and implementing a brief preconditioning strategy, we hypothesized that our nanoemulsified formulations could impart durable protection against early inflammatory responses from antigen-presenting cells that lead to cytotoxic immune cell recruitment and graft destruction.

Methodology: Harmine nanoemulsions were produced by high-pressure homogenization, then sterile-filtered and quantified by UV spectrophotometry. Harmine dosing was subsequently titrated and optimized in genetically engineered THP-1 cells by colorimetric measurement of secreted alkaline phosphatase triggered by activation of the NF-κB pathway with lipopolysaccharide. The optimized harmine nanoemulsion dose (0.2µg per mouse per day; ~10µM for in vitro dosing) was used to precondition isolated mouse islets for two hours before transplantation into the anterior chamber of allogeneic recipients. Post-transplant recipients received harmine nanoemulsion eyedrops for 14 days. Islet grafts were imaged one to two times weekly to monitor immune responses and detect rejection using dual-photon confocal microscopy.

Results: Of the five animals in the harmine nanoemulsion group, 80% had durable engraftment past 90 days, with some currently POD 120. The one animal that rejected did so at POD 49, still well beyond the cessation of treatment at POD 14. In a smaller subset, animals were rechallenged with a second allogeneic transplant in the contralateral anterior chamber with freshly isolated islets. To date, they have still not been rejected (POD 56 and POD 49 of the second transplant).

Conclusion: These findings indicate that brief harmine-nanoemulsion preconditioning, followed by 14 days of low-dose local delivery, is sufficient to provide durable protection against allogeneic graft rejection. We propose that this effect stems from dampened activation of local antigen-presenting innate immune cells, reducing pro-inflammatory surveillance signals and shifting them toward a more tolerogenic, quiescent state. Future work will evaluate graft protection in chemical and autoimmune models of hyperglycemia to assess performance under disease-relevant stress.

Keywords: Islets, Nanoemulsion, Immunomodulation

ECMO Outcomes in a Medium-Sized Community Hospital without On-Site Cardiac Surgery: Using the Shock Team Approach

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Introduction: Extracorporeal Membrane Oxygenation (ECMO) is an advanced life-support therapy used in patients with severe cardiac or respiratory failure refractory to conventional treatment or when cardiopulmonary resuscitation (CPR) fails to achieve return of spontaneous circulation (ROSC) [1,2]. The ECMO system functions by draining venous blood, oxygenating it through a membrane oxygenator, removing carbon dioxide, and returning oxygenated blood to the circulation, thereby providing temporary cardiac and/or pulmonary support [3]. Two primary ECMO configurations are used: Veno-venous (VV) ECMO, which supports gas exchange in severe respiratory failure, and Veno-arterial (VA) ECMO, which supports both circulation and oxygenation in cardiogenic or mixed shock [3,4]. Since its first successful clinical use in 1954 for cardiac surgery and adaptation for respiratory failure in 1972, ECMO technology, patient selection, and outcomes have markedly improved. While large tertiary care centers report survival rates between 40–60% for respiratory failure and 40-50% for cardiac failure [5,6], limited data are available from medium-sized community hospitals, particularly those without on-site cardiac surgery.

Objective: Retrospective review of the outcomes in 13 ECMO patients treated at a medium-sized community hospital without on-site cardiac surgery, employing a multidisciplinary “Shock Team” approach focusing on primary diagnosis, survival rate, mortality rate and complications related to ECMO.

Methods: We conducted a retrospective observational study of 13 ECMO patients treated from 2021 to 2023 at North Knoxville Medical Center, a 219-bed community hospital with 28 intensive care unit (ICU) beds. Data was extracted through chart review using an electronic medical record system and analyzed in Excel. The analysis focused on patient demographics, indications for ECMO initiation, mode of support (Veno-venous or Veno-arterial), duration of ECMO, clinical outcomes, survival and mortality rates, and ECMO-related complications. The hospital followed a Shock Team approach, wherein the ECMO coordinator initiated rapid consultation among critical care, cardiology, and an affiliated cardio-thoracic surgery team at a partnering facility. ECMO was pursued only when there is unambiguous consensus among all three services regarding patient candidacy. Seven additional patients were excluded from cannulation due to unfavorable body habitus (n=2), poor post-cardiac arrest prognosis (n=1), lack of transfer destination for post-ECMO care (n=1), and clinical improvement after optimized ventilation or proning (n=3).

Results: A total of thirteen patients (6 females, 7 males) were included in the study, with a median age of 56 years (range: 40–65 years). The primary indications for ECMO initiation were acute respiratory distress syndrome (ARDS) secondary to COVID-19 pneumonia (n=4), Other pneumonia-related acute hypoxic respiratory failure (n=4), drug overdose (n=2), pulmonary embolism (n=1), and cardiogenic shock (n=2).

Conclusion: Early initiation of ECMO and careful patient selection are critical to improving survival. One key limitation in our setting was the absence of an on-site cardiothoracic surgeon. ECMO requires specialized equipment, technical expertise, and a well-trained multidisciplinary team. Despite these challenges, achieving a 30.8% survival rate in a medium-sized community hospital was noted. While complications remain a part of ECMO management, they present valuable opportunities for learning and quality improvement. Strengthening ongoing education, refining protocols, and expanding ECMO was initiated in cases where mechanical ventilation failed to achieve adequate oxygenation, serving as

a bridge to recovery by providing cardiopulmonary support during refractory organ failure. The overall survival rate was 30.8% (4 out of 13 patients). Survivors had a mean ECMO duration of 16.8 days, compared to 10.0 days among non-survivors. The average ECMO duration across the cohort was 12.1 days. The median age of survivors was 49.5 years, while non-survivors had a median age of 59.0 years. Two patients received venovenous (VV) ECMO for isolated respiratory failure, and all four patients who were able to ambulate during ECMO support survived. Among non-survivors, common clinical features included cardiac arrest before or during ECMO initiation, drug overdose, pulmonary embolism, and multi-organ failure involving hepatic and renal dysfunction. Documented complications included intracranial hemorrhage, cannulation-related bleeding, oxygenator failure necessitating circuit exchange, and limb ischemia requiring above-knee amputation. ECMO-specific training can promote safer, more effective care at more hospitals that may not have on-site surgery.

Keywords: ECMO, cardiac surgery, multidisciplinary teams

A Rare Case of Denture Fittings Leading to *Streptococcus salivarius* Meningitis

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Introduction: Meningitis is a life-threatening inflammatory process of the membranes lining the skull and surrounding the spinal cord. The infectious agents can be viral, fungal, or bacterial. Symptoms of meningitis are nuchal rigidity, fever, and photophobia. Obtaining CSF by lumbar puncture is the gold standard for diagnosing meningitis. WBC, protein, glucose, and culture are measured in CSF analysis and used to determine the underlying causes. Results of the CSF should guide treatment, but because meningitis is life-threatening, Empiric treatment should be started if there is clinical suspicion. Empiric treatment includes Ceftriaxone IV, Vancomycin IV, Ampicillin IV, and Acyclovir. Once the agent has been determined, treatment is narrowed. Vaccinations have decreased the incidence of meningitis. The national incidence of meningococcal disease declined from 0.61 cases per 100 000 population during the pre-vaccine period (2000-2005) to 0.15 cases per 100 000 population during the post–booster dose period (2011-2017) (Mbaeyi et al., 2020). The most common pathogens to cause bacterial meningitis are Streptococcus pneumoniae and Neisseria meningitidis; however, bacteria that make up normal flora can enter the bloodstream and cross the blood-brain barrier. Streptococcus salivarius is a gram-positive, facultatively anaerobic cocci found as normal flora in the human oral cavity and upper respiratory tract. We present the case of a patient who developed acute symptoms consistent with meningitis and was treated with empiric antimicrobial therapy. Cerebrospinal fluid (CSF) analysis demonstrated findings consistent with bacterial infection. Due to empiric treatment, CSF culture was negative. Blood cultures later revealed the growth of *S. salivarius*. Review of the patient's history identified a recent dental procedure as the probable entry point for this otherwise benign organism.

Case Presentation: A 72-year-old woman with past medical history of GERD, hypertension, hypothyroidism, hyperlipidemia, psoriasis, and obesity was admitted for acute encephalopathy secondary to *Streptococcus salivarius* meningitis. Some notes: Acyclovir, ceftriaxone, ampicillin, and vancomycin were given 1 day before lumbar puncture, so the CSF culture is negative. Blood Culture x2 positive for Strep. Salivarius. The patient presented in this case had reported a recent denture procedure that disrupted the mucosal lining of the mouth, resulting in a portal of entry for a typically benign bacterium to enter the bloodstream. The patient's medical history was notable for psoriasis treated with deucravacitinib, a selective tyrosine kinase 2 (TYK2) inhibitor. TYK2 inhibition impairs signaling pathways mediated by interleukin-12, interleukin-23, and type I interferons, which play key roles in innate and cell-mediated immune responses. As a result, the patient's ability to clear transient bacteremia was diminished, allowing sustained bacteremia to develop. Hematogenous spread enabled the organism to cross the blood–brain barrier and enter the cerebrospinal fluid, resulting in bacterial meningitis.

Conclusions: This case highlights the importance of thorough history taking, early empiric treatment, and careful interpretation of laboratory data in patients with suspected meningitis, particularly in the setting of immunomodulatory therapy. Prompt recognition and appropriate antimicrobial management allowed for treatment narrowing and contributed to a favorable clinical outcome.

Keywords: Meningitis, Streptococcus salivarius, Case Report

Platelet-Rich Plasma in the Treatment of Lateral Epicondylitis

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Background: Platelet-rich plasma (PRP) is widely used to enhance healing due to its concentrated growth factors, but its clinical efficacy remains debated. This study examines how PRP preparation and administration are standardized and reported in studies from the 2021 Cochrane review on PRP and autologous blood injections for lateral elbow pain.

Objectives: To investigate the 2021 Cochrane review meta-analysis on Platelet-Rich Plasma injections for lateral epicondylitis.

Methods: We evaluated all studies included in the 2021 Cochrane Review on autologous blood and PRP injection. We used PAW and MISHRA Criteria to evaluate the studies

Results: Of 32 studies, 4 referenced any system to categorize PRP preparation within their methods sections.

Conclusion: No consistent PRP classification system was used across the reviewed studies, pointing to significant variability in preparation and reporting. This lack of standardization limits the reliability of outcomes and likely contributes to inconsistent conclusions regarding PRP efficacy.

Keywords: Cochrane review, PRP, Epicondylitis

Recurrent Triple-Negative Breast Cancer with Late Cutaneous Metastasis: A Case Report

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Background: Recurrence of breast cancer exceeding 15 years is rare. Metachronous contralateral triple-negative breast cancer with sequential cutaneous metastasis is exceptionally rare. Breast cancer relapse rate is highest after 3 years, then declines with time. This present case is noteworthy for a constellation of uncommon features in breast cancer: late local recurrence of a previously treated right-sided invasive mammary ductal carcinoma, metachronous bilateral triple-negative breast cancer with unconventional skin changes despite negative imaging, and progression of cutaneous metastasis of the left chest wall months after a mastectomy. This case report discusses diagnostic challenges with progressive skin changes and repeatedly negative imaging.

Case Presentation: An 81-year-old female presented with persistent pain in the right breast for several months in 2019. The patient had a past medical history of stage II invasive ductal carcinoma, ER/PR/HER2 negative, treated with a partial mastectomy in 2002. Despite negative imaging on both mammography and MRI, progressive skin changes prompted skin biopsies to be performed, which revealed invasive ductal carcinoma of the right breast. Soon after a right mastectomy was performed, the left breast started to show features of skin changes months later, which again were negative on all imaging modalities and skin biopsy. The patient underwent an elective left mastectomy, for which the surgical pathology reported invasive mammary carcinoma with lobular features. Several weeks following, skin changes were apparent, and pain in the left breast soon developed. Skin biopsy demonstrated carcinomatous metastasis in the skin. This case highlights the importance of urging further workups on breast cancer when clinical suspicion remains high.

Conclusion: This case demonstrates an unusual presentation of late recurrent triple-negative invasive ductal carcinoma with cutaneous metastasis, highlights the limitations in diagnostic imaging for early dermatologic disease, and the implications in evaluating progressive breast skin changes in patients with previous mammary carcinoma. Clinicians should be wary of the limitations that imaging may provide and aim to monitor supplementary signs and symptoms.

Keywords: Recurrent, TNBC, Metastasis

Revision Ankle Arthrodesis via Conversion of a Tibiotalocalcaneal Nail to a Lateral Plate Construct: Surgical Decision-Making and Outcome in a Rare Case.

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Introduction**:** Tibio-talo-calcaneal (TTC) nailing has emerged as an alternative to open reduction internal fixation for unstable ankle fractures in elderly, comorbid patients. However, when TTC nail constructs fail, revision options are poorly defined. Biomechanical studies suggest that lateral plate constructs may offer advantages in compression and resistance to plastic deformation, particularly in osteopenic bone, yet no published reports describe converting a failed TTC nail to a lateral locking plate construct.

Case Presentation An 89-year-old female with multiple comorbidities, including osteoporosis, obesity (BMI 32.2), type 2 diabetes mellitus, and cardiopulmonary disease, presented 2 years after TTC nailing of a displaced trimalleolar ankle fracture with progressive pain, skin-threatening hardware prominence, and radiographic evidence of proximal and distal interlocking screw loosening. She underwent revision surgery consisting of hardware removal, distal fibula resection, joint preparation with autologous bone grafting from the excised fibula, and fixation with a contoured femoral locking plate spanning the tibiotalar and subtalar joints. Postoperatively, a minor superficial wound dehiscence was managed conservatively. At 5 months, radiographs demonstrate interval consolidation of ankle fusion with maintained alignment, and the patient is weight-bearing as tolerated in a CAM boot with a plantigrade foot.

Conclusion: This case demonstrates that conversion to a lateral femoral locking plate construct is a viable salvage option following TTC nail failure. The technique leverages the biomechanical advantages of lateral plating, including superior joint compression and resistance to deformation in osteopenic bone. The lateral plate construct demonstrated reliable fixation and shows early signs of success without serious complications. This technique may be used as an alternative in complex revision scenarios in patients with significant comorbidities. Further investigation is needed to define patient selection criteria and long-term outcomes for this revision strategy.

Keywords: Tibio-talo-calcaneal nailing, revision ankle arthrodesis, lateral locking plate

Clinical Outcomes of a Food is Medicine Initiative for Diabetes Management in Rural Appalachia

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[*]Appalachian Regional Commission (ARC) ARISE Grant

Background: Rural Appalachia has a disproportionate burden of diabetes, driven by obesity and limited access to healthcare, healthy food, and diabetes education. Food Is Medicine interventions may help address these barriers through nutrition education, behavior change, and supportive community-based resources. This study evaluated the clinical impact of a Food Is Medicine diabetes support program implemented across a rural Appalachian health system.

Methods: This retrospective program evaluation included diabetes support group participants from 2022 to 2025. Tug Valley-Paintsville/Prestonsburg served as the primary longitudinal site, with additional Appalachian sites included in the 2025 multi-location analysis. Cohorts included a 2023 Tug Valley-Paintsville/Prestonsburg cohort (n = 34), a 2024 Tug Valley/Paintsville/Prestonsburg cohort (n = 35), a 2025 Tug Valley-Paintsville/Prestonsburg cohort (n = 37), a combined longitudinal Tug Valley-Paintsville/Prestonsburg cohort from August 2022 through 2025 (n = 71), and a 2025 all-locations cohort (n = 81). Participants with at least two A1C values were included in glycemic analyses. Attendance was standardized as the proportion of available sessions attended. Clinically meaningful improvement was defined as an A1C reduction of at least 0.5% or 1.0%. Weight outcomes were analyzed separately in the 2025 all-locations cohort among participants with at least two recorded weight measurements (n = 95). Paired two-tailed t-tests, Cohen's d effect sizes, and linear regression were used, with significance set at $p < 0.05$.

Results: In the 2025 all-locations cohort, mean A1C decreased from 6.60% to 6.40% (mean change -0.20%, p = 0.012; Cohen's d = -0.29). In the combined longitudinal cohort, mean A1C decreased from 6.97% to 6.72% (mean change -0.26%, p = 0.053; Cohen's d = -0.23). Across the combined longitudinal cohort, 26.8% achieved an A1C reduction of at least 0.5%, 11.3% achieved a reduction of at least 1.0%, and 57.8% experienced any decrease in A1C. In the 2025 all-locations cohort, 22.2% achieved an A1C reduction of at least 0.5%, 8.6% achieved a reduction of at least 1.0%, and 60.5% experienced any decrease. Mean weight in the 2025 all-locations cohort decreased from 195.83 lbs to 192.89 lbs (mean change -2.99 lbs, p = 0.0038; Cohen's d = -0.30). Participants with baseline A1C at least 9% showed the greatest improvement, with mean A1C decreasing from 10.10% to 7.80% in the 2025 all-locations cohort and from 10.19% to 8.10% in the combined longitudinal cohort. Attendance demonstrated a directional but not consistently significant association with A1C improvement.

Conclusion: This Food Is Medicine diabetes support initiative was associated with modest but meaningful improvements in A1C and weight in a rural Appalachian health system. More than half of the participants experienced some A1C improvement, and participants with poorly controlled diabetes showed the greatest reductions. These findings suggest that diabetes support groups can improve outcomes in adult patients with diabetes and support broader implementation of community-based diabetes management programs in underserved rural populations.

Keywords: Diabetes Management, Food is Medicine, Rural Health

Not Just Weakness: A Case Highlighting the Subtle Onset of Guillain-Barré Syndrome

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Introduction: Guillain-Barré syndrome (GBS) is an acute inflammatory demyelinating polyneuropathy, an autoimmune disease attacking myelin and axons present on peripheral nerves that typically presents with progressive, ascending weakness and sometimes early sensory disturbances and areflexia. GBS often manifests 1-3 weeks after a self-limiting episode of gastroenteritis secondary to infection with Campylobacter Jejuni, an organism commonly contaminating undercooked poultry products, a viral infection (Influenza, Epstein-Barr, Cytomegalovirus), or, in rare cases, surgery or vaccination. Although there are some documented idiopathic cases of GBS. Diagnosis of GBS consists of albuminocytologic dissociation, increased protein, and a normal WBC in CSF, and electromyography (EMG)/nerve conduction studies showing slowed nerve conduction. Treatment consists of intravenous immunoglobulin or plasmapheresis.

Case Description: We report the case of a 62-year-old male with past medical history of hypertension, hyperlipidemia, hypothyroidism, and Gastroesophageal reflux disease who initially presented to urgent care with a three-week history of bilateral upper and lower extremity numbness and tingling described as "pins and needles" that extended up the patient's calves. The patient describes the pain as constant and denies any remediating factors or recent viral or gastrointestinal illness. The patient's vital signs were stable. On exam, there was decreased pinprick sensation to the bilateral lower extremities, resembling a "stocking" pattern and a positive Romberg test. There was no weakness or hyporeflexia. At that time, symptoms were attributed to peripheral neuropathy, and he was discharged with gabapentin and dietary recommendations. Extensive workups, including CMP, TSH, vitamin B12, folate, were ordered as well as a brain MRI and referral to neurology. Despite initial management, the patient continued to experience progressive worsening of paresthesia, prompting presentation to the emergency department. Neurologic evaluation raised concern for an acute demyelinating process, featuring decreased sensation in bilateral upper and lower extremities. Upon hospital admission, lumbar puncture revealed albuminocytologic dissociation, and electromyography (EMG) demonstrated decreased nerve conduction, findings consistent with acute inflammatory demyelinating polyneuropathy. A diagnosis of Guillain-Barré syndrome was established, and the patient started on intravenous immunoglobulin. Upon significant improvement, the patient was discharged with gabapentin, vitamin B12, and a referral to physical therapy. The patient is currently making a slow recovery. During a post-hospital visit, the patient noted that he did, in fact, experience an episode of acute diarrhea and fever approximately 2 weeks before the neurological symptoms began, raising the suspicion of Guillain-Barré syndrome.

Discussion: This case highlights the need for a high index of suspicion for Guillain-Barré syndrome in patients with acute peripheral neuropathy, even in the absence of typical weakness or ascending paralysis, due to these variant presentations. Progressive symptom evolution should prompt urgent re-evaluation as progressive GBS without intervention poses an incredible risk of respiratory failure, autonomic instability, and bulbar dysfunction. Early diagnosis is critical, as timely initiation of treatment such as intravenous immunoglobulin or plasmapheresis can significantly improve outcomes. Early recognition and intervention remain key to reducing morbidity.

Keywords: Guillain-Barré syndrome, atypical presentation, peripheral neuropathy

Unusual Culprits: *Campylobacter ureolyticus* and *Prevotella disiens* as a Cause of Breast Abscess

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Introduction: Campylobacter ureolyticus (C. ureolyticus) is a Gram-negative, anaerobic, non-spore-forming bacillus that typically causes acute gastroenteritis, though it may present extraintestinal symptoms. C. ureolyticus cases are frequently isolated from polymicrobial infections, often in combination with gram-positive anaerobic cocci. These mixed infections commonly involve brain abscesses, intra-abdominal abscesses, and soft tissue infections. Prevotella disiens is a pigmented anaerobic Gram-negative rod that commonly colonizes oral, gastrointestinal, and vaginal flora. Prevotella-induced breast abscesses demonstrate high recurrence rates and require prolonged antibiotic therapy. C. ureolyticus and P. disiens are rarely reported together as co-pathogens, and specific documentation of breast abscess is extremely limited in the literature. This case represents a unique etiology of breast abscess that may have been precipitated by certain overlapping risk factors for opportunistic polymicrobial infections.

Case Presentation: This is a 36-year-old female who presented from jail with increasing right breast erythema and swelling for 10 days. She denied any open wound, lesion, or breast drainage. She previously received a prescription for oral TMP-SMX, which she took for two days without significant improvement. She has a past medical history significant for opioid use disorder, tobacco use, anxiety, depression, and she denied recent IV substance use, trauma, insect bite, ingrown hair, recent breastfeeding or pregnancy, or history of skin infection/abscess. On physical exam, she was well-appearing and non-toxic. Vital signs were normal. There was swelling, erythema, tenderness, and fluctuance of the right breast at the nipple without drainage noted. Imaging with CT chest showed a complex multiloculated fluid collection versus necrotic soft tissue mass measuring 3.9 x 5.8 cm transaxially with skin thickening in the right breast. There was no overt lymphadenopathy. Lab results showed an elevated white blood cell count of 12.61 x 10^3/uL. Two sets of blood cultures were negative. Anaerobic wound cultures grew Campylobacter ureolyticus and Prevotella disiens. Treatment was incision and drainage by general surgery. Initially, the patient was placed on IV piperacillin-tazobactam and IV daptomycin. IV piperacillin-tazobactam was changed to IV ceftriaxone. She clinically improved, and on day 5, she was discharged back to jail with 14 days of oral doxycycline, oral levofloxacin, and oral metronidazole.

Conclusion: This case emphasizes the diagnostic value of anaerobic cultures in breast abscesses and supports the use of antibiotics with reliable anaerobic coverage in conjunction with adequate source control.

Keywords: Breast abscess, Campylobacter, Prevotella

Shiitake Dermatitis Presenting as a Flagellate Erythema in a Middle-Aged Female: A Case Report

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Abstract: Shiitake dermatitis is an overlooked toxicoderma that appears as a visibly distinct cutaneous reaction. The reaction is characterized by an intensely pruritic urticarial reaction that appears in a flagellate or "whip-like" pattern (Rojas-Mejía et al., 2020). The rash appears after the consumption of raw shiitake mushrooms (Lentinula edodes) that contain the thermostable polysaccharide lentinan (Boels et al., 2014). When cooked at inadequate temperatures, the toxin remains biologically active and has the potential to trigger this severely uncomfortable reaction (Medonca et al., 2015). This condition has the potential to last weeks (Boels et al., 2022) and therefore warrants more awareness as it can be easily avoided through proper cooking (Medonca et al., 2015). Known to be self-limiting and have a good prognosis (Nakamura, 1992), Shiitake dermatitis has a higher known prevalence in countries such as Japan and China due to differences in diet (Shrestha, 2024). With globalization, more widespread knowledge of this condition is necessary to avoid this reaction. This would be of particular benefit in urgent care or emergency department settings where quick recognition of this condition relieves concerns of a more serious etiology (Mulhall et al., 2020).

Keywords: Shiitake Dermatitis, Flagellate Erythema, Lentinen

ROHHAD Syndrome Associated with a Neural Crest Tumor in a Pediatric Patient: A Case Report

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Background: Rapid-onset obesity with hypothalamic dysfunction, hypoventilation, and autonomic dysregulation (ROHHAD) syndrome is a rare, life-threatening pediatric disorder, with fewer than 200 cases reported as of 2022, suggesting considerable underdiagnosis. The acronym reflects the typical disease progression, with rapid weight gain as the initial manifestation, most commonly presenting between ages 2 and 7 in previously healthy children. Hyperprolactinemia is a consistent early feature that aids in diagnosis. Neural crest tumors develop in approximately 56% of patients. ZSCAN1 antibodies have shown 78% sensitivity and 100% specificity as per studies. Prader-Willi Syndrome (PWS) is the primary differential diagnosis and must be excluded through genetic testing, as it shares features of early-onset obesity and hypothalamic dysfunction. Without early intervention, prognosis is poor with a mortality rate of 50-60%, primarily due to cardiorespiratory arrest secondary to central hypoventilation.

Case: A 3-year-old female presented to the ED with shortness of breath, hypoxemia, and fever, requiring intubation for respiratory distress. Initial workup revealed significant hypernatremia (164 mmol/L), hyperprolactinemia (39.7 ng/mL), hyperinsulinemia (23.7 uU/mL), and low TSH (0.082 uIU/mL). Chest x-ray showed no infiltrate, and respiratory PCR was negative. Family history revealed progressive decline over the past year with multiple hospitalizations for similar presentations, rapid weight gain of 25 pounds, and speech regression. The constellation of laboratory findings and clinical history prompted evaluation for ROHHAD syndrome. A noncontrast CT of the abdomen and pelvis was ordered to look for associated neural crest tumors, along with urine homovanillic acid (HVA) and vanillylmandelic acid (VMA), specifically for neuroblastoma investigation. Urine HVA and VMA levels were within normal limits. CT demonstrated a left periaortic retroperitoneal mass adjacent to the left renal hilum with heterogeneous enhancement and fatty density, suggesting a ganglioneuroma/ganglioneuroblastoma. A lumbar puncture (LP) with cerebrospinal fluid (CSF) analysis, while often included in the diagnostic workup, was deferred given the substantial supporting evidence already obtained and the invasive nature of the procedure. A multidisciplinary approach was taken with several discussions between the hospitalist service, rheumatology, neurology, and surgery. While IVIG was initiated, recent evidence suggests limited benefit from this therapy in ROHHAD. Alternative immunomodulatory approaches such as high-dose cyclophosphamide have shown promise in small case series. Surgery successfully resected the tumor and pathology confirmed ganglioneuroblastoma with favorable histology, further supporting a diagnosis of ROHHAD Syndrome. Follow-up with Boston Children's Hospital for ZSCAN1 antibody testing has been coordinated.

Conclusion: Early diagnosis and treatment of ROHHAD Syndrome is critical to improve patient outcomes. A high index of suspicion is imperative for any child presenting with rapid-onset obesity, particularly when accompanied by hyperprolactinemia. The most critical factor to improve survival in these patients is early diagnosis and timely initiation of respiratory support. Long-term management requires lifelong multidisciplinary care; most patients require either nocturnal BiPAP or mechanical ventilation for ventilatory support, along with hormone replacement therapy. Regular polysomnography is essential, as sleep-disordered breathing may evolve from obstructive sleep apnea to central hypoventilation. Ongoing surveillance for neural crest tumors is also critical, with 70% diagnosed within 2 years of initial weight gain. This patient will be followed longitudinally to evaluate long-term outcomes and contribute to future systematic reviews, given the rarity of this syndrome.

Key Words: ROHHAD Syndrome, Rapid-onset, Obesity

Incidence and Mortality of Melanoma Among Adults in Urban and Rural Tennessee Counties

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Background: Over the past decade, melanoma incidence in the United States has continued to rise or stabilize while mortality has declined substantially, largely due to advances in early detection and systemic therapies such as immunotherapy. Despite these improvements, geographic disparities between rural and urban communities persist.

Methods: We conducted a population-based retrospective analysis using publicly available data from the Surveillance, Epidemiology, and End Results (SEER) program and CDC Wide-Ranging Online Data for Epidemiologic Research (WONDER). Age-adjusted incidence and mortality rates for melanoma were examined by rural versus urban county classification in Tennessee from 2004 to 2022. Trends were assessed using log-linear regression to estimate annual percent changes (APCs).

Results: Melanoma incidence rates remained stable overall, with a non-significant slight increase in rural counties (+0.6% APC, $p=0.088$) and a slight decline in urban counties (−0.2% APC, $p=0.543$); the difference in trends was not statistically significant ($p=0.103$). In contrast, mortality rates declined significantly in both rural (−1.8% APC, $p=0.00035$) and urban (−1.2% APC, $p=0.0117$) counties, with no significant difference between groups ($p=0.36$). Rural areas showed a highly significant divergence between stable incidence and declining mortality (interaction $p<0.001$).

Conclusion: Melanoma incidence in Tennessee was stable from 2004 to 2022, while mortality declined significantly in both rural and urban counties, consistent with national improvements in detection and treatment. The pronounced decoupling of incidence and mortality trends in rural areas suggest meaningful gains in survival. However, absolute rural-urban disparities in mortality persist, underscoring the need for continued targeted efforts to improve prevention, screening access, and care delivery in rural Tennessee.

Keywords: Melanoma, Rural Health, Epidemiology

Improving Safety and Decision-Making for Post-Ictal Agitation in an Urgent Care Setting: A Quality Improvement Case Report

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Introduction: Post-ictal psychosis accounts for 25% of epileptic psychosis and carries significant risks including aggressive behavior and suicide. Following a seizure episode, the limbic system loses inhibitory control, resulting in uncontrolled cortical function. Outpatient clinics must be prepared for psychiatric emergencies that may exceed available resources, yet standardized protocols for Managing acute agitation in these settings is often lacking.

Case Presentation: A 33-year-old male with a past medical history of epilepsy, recently started on Oxcarbazepine 600mg, presented to an outpatient urgent care clinic in a confused and disoriented state. During evaluation, the patient became increasingly agitated, demonstrating physical aggression and loud vocalizations that required multiple staff members to maintain safety. No antipsychotics or benzodiazepines were available on site; intravenous diphenhydramine was administered without effect. Emergency medical services were activated, and the patient was stabilized and transferred to the closest emergency department.

Assessment of System Gaps: This encounter revealed several deficiencies in emergency preparedness, including limited access to rapid-acting sedating medications, the absence of a standardized behavioral emergency response protocol, and unclear staff roles during the crisis. Uncertainty among staff regarding next steps led to delays in coordinated action and increased risk of injury to both staff and patients.

Quality Improvement Initiative: A structured behavioral emergency response protocol was proposed, emphasizing early recognition, verbal de-escalation, environmental modification, and personnel limitation as first-line interventions. When these measures are insufficient and the patient poses an imminent risk, a readily available emergency kit containing benzodiazepines, antipsychotics, and ketamine is recommended. Benzodiazepines enhance inhibitory GABA neurotransmission, antipsychotics reduce agitation through dopamine D2 receptor antagonism, and ketamine induces rapid dissociative sedation through NMDA receptor antagonism. Standardized handoff communication using the SBAR (Situation, Background, Assessment, and Recommendation) framework was also recommended. Implementation through the Plan–Do–Study–Act (PDSA) quality improvement cycle with regular simulation drills, continuous patient monitoring following intervention, and clear criteria for EMS activation was proposed to enhance staff preparedness and patient safety.

Conclusion: Post-ictal psychosis is a rare but high-risk complication of epilepsy that may present abruptly in outpatient settings and escalate beyond available resources. This case underscores the need for structured emergency protocols, accessible pharmacologic interventions, defined team roles, and simulation-based training in outpatient settings to safely manage post-ictal psychosis and ensure timely transfer to higher levels of care.

Keywords: Standardization, Quality Improvement, Safety

Age-Related Disparities in Clinical Outcomes Among Hospitalized Patients with Cholangiocarcinoma: A Nationwide Analysis 2016-2021

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Background: Cholangiocarcinoma (CCA) is a rare but increasingly prevalent biliary tract malignancy with a poor prognosis. While age is a known risk factor for CCA development, the impact of age on in-hospital outcomes among hospitalized patients remains poorly characterized. Understanding age-related disparities is essential for risk stratification and resource allocation.

Objectives: To examine the association between age and clinical outcomes, including mortality, complications, length of stay, and discharge disposition, among hospitalized patients with cholangiocarcinoma using a nationally representative sample.

Methods: We conducted a retrospective cohort study using the National Inpatient Sample (NIS) database from 2016 to 2021. Adults aged ≥18 years with a diagnosis of cholangiocarcinoma were identified using ICD-10-CM codes (C22.1, C24.0, C24.8, C24.9). Patients were categorized into five age groups: <50, 50-59, 60-69, 70-79, and ≥80 years. Outcomes included in-hospital mortality, discharge disposition, length of stay, total charges, elective admission status, and complications (sepsis, acute kidney injury [AKI], liver failure, and mechanical ventilation). Survey-weighted multivariable logistic regression models were adjusted for race, sex, income, insurance, hospital characteristics, and year.

Results: A total of 35,915 unweighted hospitalizations (weighted N=179,575) were analyzed. Mean age was 67.3 years. Compared to patients <50 years, adjusted odds of mortality increased progressively: 50-59 years (AOR 1.25, 95% CI 1.03-1.52), 60-69 years (AOR 1.56, 95% CI 1.30-1.87), 70-79 years (AOR 1.74, 95% CI 1.41-2.13), and ≥80 years (AOR 1.80, 95% CI 1.45-2.24). AKI demonstrated the strongest age gradient, with adjusted odds nearly doubling by age 70-79 (AOR 1.90, 95% CI 1.67-2.16). Notably, liver failure showed a paradoxical decrease with advancing age (AOR 0.54, 95% CI 0.43-0.66 for ≥80 years). Discharge to home declined dramatically from 69.3% in patients <50 years to 33.7% in those ≥80 years ($p<0.001$). Elective admissions dropped significantly after age 80 (AOR 0.84, 95% CI 0.72-0.97).

Conclusions: Significant age-related disparities exist among hospitalized patients with cholangiocarcinoma. Older age is independently associated with higher mortality, increased AKI and sepsis risk, and lower rates of home discharge. The paradoxical decrease in liver failure with age warrants further investigation. These findings highlight the need for age-specific management strategies and enhanced supportive care for older adults hospitalized with cholangiocarcinoma.

*Keywords***:** *Cholangiocarcinoma, age disparities, National Inpatient Sample*

Triple Synchronous Neoplasm in the Cecum of an Older Adult: Diagnostic Challenges and Individualized Screening

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Background: Colon adenocarcinoma is the third most common gastrointestinal cancer, with an incidence of 37 per 100,000 annually. Colonic neuroendocrine tumors (NETs) and low-grade appendiceal mucinous neoplasms are less common, with an incidence of 1 per 100,000 and 1-3 per million, respectively. The finding of these three distinct neoplasms in a single surgical resection specimen raises questions about diagnostic strategies, screening guidelines, and the quality of colonoscopy in older adults. The majority of colorectal cancers, 60-85%, are diagnosed after the onset of symptoms, which are typically due to growth of the tumor into the lumen or adjacent structures, causing symptomatic presentation of colorectal cancer reflecting advanced disease. Typical signs and symptoms: hematochezia or melena, abdominal pain, unexplained iron-deficiency anemia, and/or changes in bowel habits. Less common: abdominal distension, and/or nausea and vomiting, which may be indicators of obstruction. Right-sided CA: iron deficiency anemia from unrecognized blood loss; cecal and ascending colon tumors have a four-fold higher mean daily blood loss (approx 9mL/day) than tumors at other colonic sites. Left-sided CA: change in bowel habits, obstructive symptoms including colicky pain, hematochezia (rectosigmoid).

Case Presentation: 82-year-old male Vietnam war veteran with a history of CHF (EF of 30%), COPD, Atrial Fibrillation, hyperlipidemia, hypertension, prostate cancer, abdominal aortic aneurysm (AAA) s/p repair, and Agent Orange exposure presented to ER with unexplained anemia, intermittent abdominal pain and vomiting, and 30-pound unintentional weight loss for the past 2 years. Despite multiple emergency room visits and hospitalizations for anemia requiring transfusions, without identification of the bleeding source, workup was directed towards treatment of obstructive uropathy, hydronephrosis, and recurrent urinary tract infections. Colonoscopy 6 years prior showed hemorrhoids. On presentation, the patient was hemodynamically significant with a blood pressure of 90/35 mmHg. Laboratory evaluation revealed Hgb 6.3 g/dL with microcytic indices

(MCV 79 fL, MCH 23.2 Pg), hypoalbuminemia (2.3 g/dL), elevated BUN (56 mg/dL), and creatinine (2.51 mg/dL), elevated NTproBNP(4,297 pg/mL), and a positive fecal immunochemical test (FIT). CT without contrast revealed bilateral lower lobe bronchial wall thickening with mucus plugging and peripheral patchy infiltrates and atelectasis. Trace pleural effusions, advanced emphysema, bilateral hydronephrosis, and nonobstructing renal calculi, simple and hyperdense bilateral renal cysts have not changed. The appendix was described as remarkable. Small amount of ascites. No evidence of enlarged nodes or suspicious metastasis. GD/Colonoscopy in 2025 revealed colonic mass in ascending colon/proximal transverse enxompasing approximately 50% of the lumen, 2 rectal polyps, internal hemorrhoids, and diverticulosis throughout. Possible Barrett's esophagus. Biopsies were taken. Biopsy confirmed invasive moderately differentiated adenocarcinoma. Immunohistochemistry for mismatch repair proteins demonstrated retained nuclear staining, consistent with a microsatellite-stable phenotype. Robot-assisted hemicolectomy revealed a 5.5 cm colonic mass and a 4.5 cm appendix mass. Pathology demonstrated three synchronous neoplasms: (1) a 5.5 cm moderately differentiated adenocarcinoma (pT4aN0); (2) an adjacent well-differentiated neuroendocrine tumor (NET) positive for synaptophysin and CD56 with a Ki-67 index <3% in the colonic mass, and (3) a 4.5 cm low-grade appendiceal mucinous neoplasm (LAMN; pTisN0), and a single lymph node positive for synaptophysin and CD56 with Ki-67 index <3%. The patient recovered well postoperatively.

Discussion: This case is remarkable for the coexistence of three histologically distinct neoplasms discovered in a single specimen. The pathologic finding of well-differentiated NET adjacent to the colonic adenocarcinoma and within a lymph node raises the question of whether this represents a collision tumor--two independent primary neoplasms arising in the same location--or a metastatic NET from an occult primary deposited within the colonic mass. The pathologist favored the latter interpretation, reporting the NET as a "metastatic neuroendocrine tumor of unknown origin" with no definitive primary identified. Clinical and radiologic correlation was recommended to determine the likely primary source. This distinction has important implications for staging, surveillance, and further workup. The MSS phenotype on immunohistochemistry argues against Lynch Syndrome as a unifying genetic explanation for the multiple synchronous neoplasms. While exposure to Agent Orange is a recognized risk factor for certain malignancies, current evidence does not support a direct association with colorectal, appendiceal, or neuroendocrine tumors. While Agent Orange exposure has been associated with prostate cancer, soft tissue sarcomas, and non-Hodgkin lymphoma, as well as increased risk of chronic lymphocytic leukemia, diffuse large B-cell lymphoma, follicular lymphoma, and multiple myeloma, evidence does not show a direct association with colorectal, appendiceal, or neuroendocrine tumors. This case demonstrates the diagnostic limitations of cross-sectional imaging in patients with surgically modified anatomy. Two CT scans--one without contrast and one with contrast--were performed within weeks of surgery, and both failed to identify a 5.5 cm cecal mass and a 4.5 cm appendiceal neoplasm. The CT with contrast explicitly described the appendix as "unremarkable" and noted "no abnormally dilated loops of large or small bowel". Dense adhesions and distorted retroperitoneal anatomy from prior AAA repairs likely obscured these findings. Intraoperatively, the tumor was found deeply embedded in the retroperitoneum, surrounded by adhesions. The colonoscopy performed 6 years earlier also failed to detect what ultimately became a large cecal mass, raising concerns about examination quality in the setting of adhesions and distorted anatomy. Colonoscopy played a pivotal role in diagnosis.

Keywords: Triple Synchronous Neoplasms, Agent Orange Exposure, NET

Unmasking Left Ventricular Noncompaction Cardiomyopathy: NSTEMI in a 37-Year-Old Woman with Hypertensive Crisis

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Case Presentation: A 37-year-old female with no significant medical history, aside from chronic tobacco dependence, presented to the emergency department (ED) with 12 hours of crushing chest pain, typical of angina. She was found to be hypertensive, with a systolic blood pressure (SBP) of 220 mmHg. An EKG showed sinus bradycardia (heart rate of 51 bpm) without evidence of ST-elevation myocardial infarction (STEMI). Chest X-ray (CXR) did not reveal any acute findings. Laboratory tests showed serial troponin levels rising from 5,000 to 21,387. Her proBNP level was 3,304. The initial working diagnosis was acute NSTEMI. Following a cardiology consultation, an acute coronary syndrome (ACS) protocol was initiated, leading to a decision to consider an early invasive strategy. Left heart catheterization was performed, revealing mild disease in the nondominant right coronary artery with 40% proximal stenosis. Left heart pressures were normal, and left ventricular ejection fraction (LVEF) was 60%, with prominent trabeculations concerning for left ventricular noncompaction (LVNC). Mild mitral regurgitation and trace aortic regurgitation were also noted. A transthoracic echocardiogram (TTE) confirmed a LVEF of 60% and reiterated the presence of prominent trabeculations suggestive of LVNC. The cardiology team suspected possible LVNC cardiomyopathy, and a cardiac MRI was recommended for further confirmation. The patient was started on dual antiplatelet therapy (DAPT) and Eliquis to prevent coagulation, as well as Losartan-HCTZ and amlodipine for blood pressure control, and atorvastatin.

Discussion: Left ventricular noncompaction (LVNC), also known as isolated ventricular noncompaction or left ventricular hypertrabeculation, is a rare unclassified cardiomyopathy characterized by an altered myocardial wall. This condition results from an intrauterine arrest of compaction in the loose interwoven meshwork that forms the fetal myocardial primordium. LVNC has been identified in approximately 0.05 percent of patients undergoing echocardiography. It can be either sporadic or familial, with the latter predominantly following an autosomal-dominant inheritance pattern and involving around 66 implicated genes. Patients with LVNC often present with heart failure, thromboembolism, or ventricular arrhythmias. Our index patient was a young woman with no past medical history, though she had risk factors including cigarette smoking, a family history of heart disease, and a sedentary lifestyle. This case report illustrates a rare cause of cardiomyopathy that predisposed the patient to a hypertensive emergency, ultimately leading to myocardial strain and NSTEMI type 2 (demand ischemia). The diagnosis of LVNC is typically established by identifying morphologic diagnostic criteria on TTE, including a non-compacted-to-compacted myocardial thickness ratio greater than 2:1 at end-systole. Cardiac MRI is recommended for most patients with known or suspected LVNC.

Conclusion: This case highlights the importance of considering left ventricular noncompaction cardiomyopathy (LVNC) in young patients presenting with acute coronary syndrome–like symptoms without significant coronary artery disease. Early recognition through echocardiography and cardiac MRI is essential for accurate diagnosis and risk stratification. Prompt identification and tailored management can mitigate complications such as heart failure, arrhythmia, and thromboembolism associated with LVNC.

Keywords: LVNC, Cardiomyopathy, NSTEMI

Alpha-Gal Syndrome: Recognizing the Delayed Allergic Reaction that Mimics Other Conditions

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Introduction: Alpha-gal syndrome (AGS) is a tick-borne, IgE-mediated allergy to galactose-α-1,3-galactose in mammalian meat, increasingly recognized in Lone Star tick–endemic regions. Its variable presentation often mimics functional or food-related disorders, leading to frequent misdiagnosis. Diagnosis is challenging due to delayed symptoms and requires clinical correlation beyond serology. We describe a case of AGS with an atypical serologic profile and significant improvement following dietary modification, highlighting the importance of clinical suspicion in endemic areas.

Case Presentation: A 24-year-old woman presented to establish endocrinology care after abnormal thyroid function tests suggestive of hypothyroidism were identified during a recent emergency department visit. Her medical history was notable for rheumatoid arthritis, cat scratch disease, anxiety, and depression, and her medications included leflunomide, sertraline, and oral contraceptives. Evaluation for additional autoimmune and endocrine etiologies, including autoimmune panel, cyclic citrullinated peptide antibodies, ACTH stimulation testing, thyroid peroxidase antibodies, celiac panel, TSH, and free T_4, was unremarkable. She reported nine emergency department visits over the prior year for recurrent, nonspecific symptoms, including severe muscle cramping, fatigue, nausea, and vomiting. Given her rural residence and history of tick bites, allergies, and angioedema, an AGS panel was obtained, demonstrating elevated meat-specific IgE levels to beef (0.14), lamb (2.65), and pork (4.10) with negative galactose-α-1,3-galactose IgE (E<0.10). Implementation of dietary avoidance of mammalian meat, along with an epinephrine autoinjector and symptom tracking, resulted in significant clinical improvement.

Discussion: Alpha-gal syndrome is an IgE-mediated hypersensitivity to oligosaccharide galactosealpha-1,3-galactose, found on non-primate mammalian cells, induced by Lone Star tick bites. Prevalence estimates remain uncertain, hindered by underreporting, regional variability, and lack of diagnostic coding. Sensitization following tick exposure induces alpha-gal-specific IgE via Th2 signaling and IL-4/IL-13–mediated B-cell differentiation. Alpha-gal-specific IgE produced binds to FcεRI receptors on mast cells and basophils. Allergic reactions occur upon subsequent ingestion of mammalian meat or exposure to derived products. Cetuximab, a chimeric mouse-human monoclonal antibody, has also been linked to Alpha-gal syndrome with a higher rate of reactions in the southeastern United States (22% in Tennessee and North Carolina) versus < 1% in most centers in the northeastern US. Notably, unlike traditional food allergies that cause immediate reactions, AGS is defined by a delayed response, usually appearing 2–6 hours after consuming mammalian meat, dairy, or gelatin. Patients may develop classic hives or severe anaphylaxis, but it is also increasingly recognized as a cause of isolated gastrointestinal morbidity and linked to premature atherosclerosis. Evaluation requires a detailed dietary and tick-exposure history, supported by elevated serum IgE to Alpha-gal. Management focuses on strict avoidance of mammalian products, tick bite prevention, and access to emergency epinephrine. Clinicians should suspect AGS in patients from tick-endemic areas with delayed, often nocturnal reactions after red meat consumption, as presentations can vary and misdiagnosis is common.

Conclusion: This case underscores the need for heightened suspicion of AGS in patients with recurrent, unexplained gastrointestinal or systemic symptoms in tick-endemic regions. Early recognition and avoidance of mammalian meat can yield substantial symptom relief and reduce unnecessary healthcare utilization.

Keywords: Alpha-Gal Syndrome, Delayed Hypersensitivity, and Diagnostic Challenge

Diagnostic, Imaging, and Surgical Challenges of Giant Ovarian Mucinous Cystadenoma in a Pre-Menopausal Woman: A Case Report

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Background: About 20% of women may experience at least one pelvic mass in their lifetime, making ovarian cysts a common gynecological diagnosis. Fortunately, today, with women receiving annual gynecological exams, the occurrence of large ovarian cysts has significantly decreased. However, diagnosing and treating large ovarian cysts remains a challenge within the gynecological field. The objective of this report is to describe the case of a giant ovarian cyst, as well as to highlight the limitations of diagnostic imaging, surgical considerations, and the importance of continuous clinical monitoring of ovarian cysts.

Case Presentation: A 48-year-old G1P1 premenopausal woman presented for gynecological evaluation due to progressive abdominal distension, early satiety, and unintended weight gain. She reported being diagnosed with a 9 cm left ovarian cyst approximately two years prior; however, she did not undergo subsequent clinical surveillance. Subsequent imaging showed a 30 cm x 20 cm x 13 cm pelvic cystic mass originating from the left ovary with a few intervening septations and no nodular solid components or focal wall thickening. The measurement of a serum CA-125 was within normal range. With imaging suggestive of a benign lesion favoring a serous cystadenoma, surgical intervention was considered. Due to the patient's age approaching menopause, no stated desire for future fertility, the size of the mass, and risk reduction with definitive surgery, a total hysterectomy with bilateral salpingectomy was elected. During the procedure, to allow for complete excision of the cyst and simultaneously preventing spillage, a controlled-drainage approach was used. Approximately three liters of mucinous fluid were drained from the cyst. Tissue pathology confirmed unilocular mucinous cystadenoma without atypia or malignancy. Additionally, although imaging was initially suggestive of a cyst consistent with macrolobulated masses and septations, a single cystic cavity was noted on pathology. The patient's postoperative course was unremarkable with complete symptom relief.

Conclusion: The case of a 48-year-old premenopausal woman presenting with non-specific symptoms, later diagnosed with a 30 cm ovarian mucinous cystadenoma, highlights both the surgical management of a giant ovarian cyst using a controlled-drainage technique, as well as the imaging limitations associated with accurately characterizing the architecture of ovarian masses. The consideration of continuous clinical surveillance of ovarian masses may help in the recognition of rapid growth sooner, allowing for surgical intervention prior to the progression of a giant ovarian cyst.

Keywords: Case Report, Ovarian Cyst, Cystadenoma

Severe Protein-Calorie Malnutrition in a Patient with Psychiatric Illness: Challenges in Nutritional Rehabilitation

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Introduction: Protein-calorie malnutrition is rare among younger adults in developed countries but prevalent in at-risk groups, particularly institutionalized individuals and those with chronic medical or psychiatric conditions. Patients with severe psychiatric disorders have a heightened risk due to impaired insight, medication side effects, and food refusal. Advanced malnutrition results in significant metabolic instability and potentially fatal complications, including refeeding syndrome during nutritional rehabilitation.

Case Presentation: A 41-year-old female group home resident presented to the emergency department after a syncopal episode. Her history included paranoid schizophrenia, bipolar disorder with psychotic features, and Crohn's disease. Caregivers described several weeks of near-total cessation of oral intake. On evaluation, the patient was profoundly malnourished, with a BMI of 8.6 kg/m² and hypotension (80/69 mmHg). Physical exam revealed cachexia, severe temporal wasting, diffuse muscle atrophy, bilateral +4 pretibial edema, and oral candidiasis. Labs showed marked hypoalbuminemia (0.8 g/dL) and hypophosphatemia (1.8 mg/dL). Findings were consistent with advanced protein-calorie malnutrition and high risk for refeeding syndrome. She was admitted to the intensive care unit for management of hypotension and volume depletion. After stabilization, cautious nutritional rehabilitation was initiated. She received high-calorie oral supplements and underwent close electrolyte monitoring. Despite initial tolerance, she persistently refused oral intake and repeatedly removed nasogastric and parenteral nutrition access. Plans for percutaneous endoscopic gastrostomy (PEG) tube placement were delayed due to complications, including small bowel obstruction and ascites. After repeated admissions for less severe episodes, her psychiatric medications were adjusted, and her appetite was stimulated with various foods. Today, her BMI has improved to 18.1 kg/m², and she is doing well.

Conclusions: This case highlights the severe consequences of persistent food refusal in patients with chronic psychiatric illness. Individuals with disorders such as schizophrenia are particularly vulnerable to malnutrition. Impaired judgment, delusional beliefs about food, and poor adherence contribute to this risk. Comorbid medical conditions, such as Crohn's disease, may further worsen nutritional deficiencies. Prevention of refeeding syndrome is critical in the management of severe malnutrition. This potentially fatal condition results from rapid electrolyte shifts after nutritional repletion. Hypophosphatemia is a hallmark and requires careful monitoring and gradual caloric advancement. In this patient, early recognition allowed for cautious nutritional intervention. Management was complicated by intolerance of both enteral and parenteral nutrition, which limited treatment options. Gastrointestinal complications, specifically bowel obstruction and ascites, precluded PEG tube placement. These limitations highlight the necessity of a multidisciplinary approach, requiring medical, psychiatric, nutritional, and surgical teams to address underlying psychiatric pathology and nutritional requirements. Severe protein-calorie malnutrition in patients with psychiatric illness presents major diagnostic and therapeutic challenges. Persistent food refusal can cause profound metabolic disturbances and complicate nutritional rehabilitation. Early recognition and close monitoring for refeeding syndrome are essential. Coordinated multidisciplinary care is critical. Addressing psychiatric and behavioral barriers to nutrition is also necessary to improve outcomes in this high-risk population.

Keywords: Malnutrition Medicine, Behavioral Health, Rehabilitation

Critical Illness Polyneuromyopathy: A Case Report

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Introduction: Critical illness myopathy (CIM) and critical illness polyneuropathy (CIP) are important neuromuscular disorders that occur secondary to severe illness and may present in isolation or together as critical illness polyneuromyopathy (CIPNM). CIM is characterized by proximal, flaccid, symmetric paralysis affecting skeletal muscle, while CIP more commonly causes distal, flaccid, symmetric weakness with sensory deficits involving nerve axons. Critical illness-associated weakness encompasses this spectrum and affects approximately 30–50% of ICU patients, with rates reported as high as 70% among patients with sepsis. Risk factors include acute respiratory distress syndrome, sepsis, systemic inflammatory response syndrome, multiple organ failure, prolonged immobilization, gram negative bacteremia, hyperglycemia, prolonged intubation, malnutrition, female sex, and older age. Patients may initially be identified through difficulty weaning from mechanical ventilation, profound symmetrical flaccid paresis, muscle atrophy, decreased deep tendon reflexes, sensory loss in CIP, and dependence with activities of daily living. Because CIPNM is associated with prolonged rehabilitation, poor outcomes, and potential permanent functional loss, early recognition, neuromuscular evaluation, and early mobilization are critical.

Case Presentation: A 24-year-old male with no significant past medical history initially presented to an acute care hospital with vague abdominal symptoms. Computed tomography demonstrated toxic megacolon in the setting of disseminated aspergillosis. Further workup revealed septic shock, requiring multiple surgeries, including colectomy, over nearly two months. His clinical course required ventilator support for one month. After extubation, he demonstrated significant functional decline with clinical evidence of polyneuromyopathy and severe pain. Following evaluation by inpatient physical and occupational therapy, he was transferred to acute inpatient rehabilitation. At the time of rehabilitation admission, the patient was dependent for most tasks. His presentation was consistent with critical illness polyneuromyopathy in the setting of severe systemic illness, sepsis, prolonged immobilization, and ventilator dependence. During acute inpatient rehabilitation, he received intensive therapy, totaling 15 hours per week. He made steady functional progress throughout admission. By discharge, he improved from dependence for most tasks to minimal assistance or independence for all tasks and was ambulating with a rolling walker. He continued to ambulate with a rolling walker after discharge but was able to function mostly independently.

Conclusions: This case represents an unusual presentation of a relatively common ICU-associated neuromuscular complication in a young, previously healthy patient. Critical illness polyneuromyopathy can be missed, particularly when weakness is attributed only to general deconditioning after severe illness. The case highlights the need for early recognition, complete neuromuscular examination, consideration of neurodiagnostic testing, and early mobilization once medically stable. There are currently no disease-specific treatments shown to reverse CIPNM; management remains supportive and includes early physical therapy, active and passive range of motion, glycemic control, nutritional support, and aggressive treatment of the underlying critical illness. This patient's meaningful functional recovery after intensive inpatient rehabilitation demonstrates the importance of early rehabilitation referral to reduce morbidity, support independence, and help prevent long-term disability.

Keywords: Critical Illness Polyneuromyopathy, Inpatient Rehabilitation, ICU-Acquired Weakness

Alcohol Use Indicators Identified by Screening Hospitalized Adults in a Community Hospital in Rural Tennessee: A Cross-Sectional Study

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Introduction: Alcohol use is a major contributor to preventable morbidity and mortality in the United States. Hospitalization presents a unique opportunity to identify unhealthy alcohol use and initiate early intervention. Screening for harmful alcohol use is common in primary care but not common among hospitalized adults. While much of the existing data comes from academic centers, there is limited information on alcohol consumption patterns among hospitalized patients in community hospitals, particularly in rural Tennessee. Understanding local prevalence and patterns of alcohol use can inform screening practices and resource allocation

Methods: We conducted a single-center, brief anonymous survey of adult (≥18years old) hospitalized patients in a community hospital who met our eligibility criteria. We utilized the validated Alcohol Use Disorders Identification Test- Consumption (AUDIT-C) screening tool to assess unhealthy alcohol use within the past 30 days prior to hospitalization. The National Institute on Alcohol Abuse and Alcoholism (NIAAA) single alcohol screening question (SASQ) was used to assess binge drinking which was defined as ≥ 5 drinks for those assigned male at birth or ≥ 4 drinks for those assigned female at birth on ≥ 1 occasion within the past year.

Results: Majority of participants surveyed are aged 60+(Mean 69 ± 4 years), 61% are female. Out of 93 participants screened, 26% reported binge alcohol use within the past year (Mean SD 31, 95% CI 46.5 ± 6.5). Twenty-one and Thirty-six respondents had a total AUDIT-C score of ≥ 4 and ≥ 2 respectively (Mean 2.0, Median 1(IQR 1- 12). Only 19% of participants surveyed discussed their use with a provider.

Conclusion: Unhealthy Alcohol use was common among hospitalized adults, yet most participants did not perceive a need to discuss their use with a provider. Incorporating validated alcohol screening tools into routine admission protocols could enhance early identification and enable timely, targeted interventions.

*Keywords: Unhealthy Alcohol Use, Screening, Hospitalized Adult*s

Clinical Efficacy and Safety of Minimally Invasive Sacroiliac Joint Fusion: A Retrospective Cohort Study

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Introduction: Sacroiliitis, inflammation of one or both sacroiliac (SI) joints, is estimated to account for 15% to 30% of cases of chronic low back pain. Conservative treatments - such as physical therapy, medications, and corticosteroid injections - are the first-line treatment options for these patients. However, when they fail to provide lasting relief, surgery may become necessary. The purpose of this study is to evaluate the clinical outcomes of minimally invasive sacroiliac joint fusion (MI SIJF), specifically focusing on pain improvement and post-operative complication rates at the 6-month follow-up.

Methods: A retrospective chart review of 17 patients who underwent minimally invasive sacroiliac joint fusion (MI SIJF) procedures was conducted. Two of the participants underwent bilateral SI fusions at separate time points, resulting in a total of 19 MI SIJF procedures in the cohort. Patient-reported outcomes, including pain scores via the Visual Analog Scale (VAS), were collected at baseline, 10 days, 6 weeks, 10 weeks, and 6 months post-operatively. Complication rates and time to symptom relief were also recorded. Statistical analyses were performed after data collection using paired t-tests to assess improvements in VAS scores following treatment. A p-value of <0.05 was considered statistically significant. All analyses were performed using Excel.

Results: From the data collected, the average percent pain relief at 6 months post-SI fusion was 74.7%. The mean VAS pain score improved significantly from a baseline of 75.8 to 17.8 at 6 months. While initial symptom relief was noted as early as 10 days post-operatively, maximal improvement was realized by the 6-month mark. No major complications were observed within the cohort.

Conclusion: This study demonstrates that minimally invasive sacroiliac joint fusion is a safe and highly effective treatment for patients with chronic sacroiliitis who have failed conservative management. The observation of significant relief at 10 days post-operatively provides a new benchmark for early recovery. While further prospective research is needed to validate these findings in larger populations, this study confirms that MI SIJF is a reliable and superior alternative to continued conservative management for chronic sacroiliitis.

Keywords: Sacroiliitis, Minimally Invasive Sacroiliac Joint Fusion, Chronic Low Back Pain

The Diagnostic Funnel – A Systematic Selection Protocol to Optimize Outcomes in Minimally Invasive Sacroiliac Joint Fusion: A Retrospective Cohort Study

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Background: While minimally invasive sacroiliac joint fusion (MI SIJF) is an established treatment for chronic sacroiliac (SI) joint pain, variability in responder rates suggests a need for more stringent preoperative selection criteria. Standard diagnostic protocols often rely on transient anesthetic blocks, which may be susceptible to false positives. The purpose of this study is to evaluate whether a rigorous, multi-stage "Diagnostic Funnel" - incorporating clinical history, physical examination, and a 14-day therapeutic corticosteroid response - predicts superior clinical outcomes following MI SIJF.

Methods: A retrospective chart review of 17 patients who underwent minimally invasive sacroiliac joint fusion (MI SIJF) procedures was conducted. Two of the participants underwent bilateral SI fusions at separate time points, resulting in a total of 19 MI SIJF procedures in the cohort. Surgical candidacy required 100% adherence to a three-stage protocol: (1) chronic non-radicular pain with a positive Fortin Finger Sign; (2) a minimum of 3-out-of-6 positive provocative maneuvers; and (3) a “Durability Threshold” of at least 70% pain relief maintained for at least 14 days following an image-guided SI corticosteroid injection. The primary outcome was the change in Visual Analog Scale (VAS) pain scores at 6 months post-operatively.

Results: All of the patients in our cohort met the full diagnostic criteria before surgery. Clinical history and physical examination findings were consistent across the cohort, with Gaenslen’s (94.7%) and Thigh Thrust (89.5%) being the most frequent positive provocative maneuvers. Adherence to the protocol was correlated with a mean pain reduction of 74.7%. Furthermore, 94.4% of patients achieved the Minimal Clinically Important Difference (MCID), defined as a greater than or equal to 20-point reduction in VAS pain scores.

Conclusion: This study demonstrates that the use of a rigorous, multi-stage "Diagnostic Funnel" predicts superior clinical outcomes following MI SIJF. In addition, the "Durability Threshold" via corticosteroid response provides a reliable clinical simulation of surgical success. By prioritizing diagnostic specificity, surgeons can achieve outcomes that exceed traditional benchmarks. While further prospective research is needed to validate these findings in larger populations, these findings suggest that a 14-day therapeutic window should be considered for identifying ideal candidates for mechanical stabilization.

Keywords: Sacroiliac Joint Fusion, Patient Selection, Sacroiliitis

Thank You

I want to extend my deepest gratitude to our LMU-DCOM alumni, faculty, staff, preceptors, mentors, and students for your continued support and dedication to excellence in medical education and research.

Congratulations to all our poster presenters. Your contributions today demonstrate the intellectual curiosity and scientific rigor that define medical education and practice. I want to offer special recognition to our alumni who graciously host this conference, as well as the mentors and preceptors whose guidance was instrumental in shaping these research endeavors.

The work presented today represents both innovation and a relentless pursuit of better patient outcomes. Bringing a showcase of this caliber to fruition requires immense coordination. I want to extend a special thank you to Amanda McCoy, MPH, for her dedication to creating this program and for assisting with the planning of this competition from start to finish. We are also incredibly grateful to the entire Department of Research here at LMU-DCOM for their unwavering support and the invaluable resources that made this success possible.

Thank you all for your active participation and your continued commitment to advancing medical knowledge. We look forward to seeing you again next year as we continue this vital tradition of academic excellence.

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