

## SMA's 3rd Annual Physicians-in-Training Leadership Conference Abstract Presentations

The following abstracts were accepted and presented during Southern Medical Association's Third Annual Physicians-in-Training Leadership Conference that took place February 24-26, 2023 at The University of Tennessee Health Science Center in Memphis, Tennessee and virtually. Abstracts are listed according to reference number and are published as submitted.

To view the video presentations of these abstracts, please visit <https://sma.org/abstracts/>.

### Abstract Reference Number: 1

#### Author:

Presenting Author: Alexis Edmonson B.A., M.S.

Coauthor: Victoria Ierulli, M.S., Sean Clark, M.S., Mary Mulcahey, MD

**Submission Type:** Clinical Science Presentation (A well-defined basic or clinical research project)

**Submission Category:** Surgery & Surgical Specialties

**Presentation Type:** Poster Abstract Presentation

#### Abstract Title: Deep Venous Thrombosis After Proximal Hamstring Tendon Repair: A Systematic Review

##### Abstract

**Introduction:** Proximal hamstring tendon injuries are common among athletes and are often caused by movements involving rapid hip flexion while in knee extension. Treatment of these injuries includes tendon repair through operative intervention, but postoperative complications can occur, including deep vein thrombosis (DVT). The purpose of this study was to characterize the factors related to the development and treatment of DVTs following proximal hamstring repair.

**Methods:** A systematic literature review was conducted in accordance with Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. PubMed and EMBASE were searched from database origin to May 2022. Studies were included if they discussed proximal hamstring repair, postoperative outcomes for at least 6 months, patient demographics, number of tendons injured, occurrence of DVT postoperatively, and specified acute or chronic injury.

**Results:** A total of 657 studies were identified, 8 of which (422 patients, 464 proximal hamstring repairs) met the inclusion criteria. Nine cases of DVT were identified in the postoperative period. 2 of the 9 (22.2%) DVTs occurred in patients undergoing repair for chronic proximal hamstring tendon ruptures. 33.3% (3/9) of the total DVTs were observed in patients with a complete proximal hamstring tear. 2 of the 9 (22.2%) occurred in patients with an acute, complete tear of the proximal hamstring tendon. One study (12.5%) reported the use of DVT prophylaxis, which yielded only 1/52 (0.02%) patients with postoperative DVT. **Conclusions:** There is limited data available regarding the incidence of DVT and postoperative prophylaxis protocols following repair of proximal hamstring avulsion injuries. The results of this study demonstrated that more than half of (5/9) DVTs occurred in patients with a complete proximal hamstring tendon avulsion. Although all patients undergoing repair of proximal hamstring avulsion injuries are at risk of developing a DVT, there is currently no standard prophylactic regimen. Orthopaedic surgeons should strongly consider developing a method in attempt to decrease the incidence of postoperative DVTs.

##### References

## Learning Objectives

1. To examine the characteristics associated with DVT incidence following proximal hamstring tendon repair
2. To observe previous studies that evaluated postoperative DVT and how to better characterize the potential causes

## Abstract Reference Number: 2

**Submission Type:** Case Presentation (A clinical scenario with discussion of a patient)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Poster Abstract Presentation

**Presenting Author:** Kavita BA

**Coauthors:** Kavita Patwardhan, BA, 3rd Year Medical Student, Tulane University School of Medicine, New Orleans, LA; Cade Picou, DO, Neurology, PGY2, Tulane University School of Medicine, New Orleans, LA

**Abstract Title:** A Dangerous Cycle: Wernicke's Encephalopathy Associated with Diabetic Gastroparesis

### Abstract

**Introduction:** Wernicke's encephalopathy [WE] occurs in 1-2% of the general population in the US. It is defined by the triad of ophthalmoplegia, ataxia, and confusion. In the US, most cases of WE are related to alcohol abuse, but this case presents a patient whose WE developed because of an uncontrolled chronic metabolic condition.

**Case Presentation:**

Patient is a 47-year-old woman with a past medical history of uncontrolled T2DM, HTN, and CKD3 admitted to the hospital on 10/14/22 with intractable nausea/vomiting and diarrhea for one week. She had been in and out of the hospital for the past few months with these symptoms. Upon admission, she reported abdominal pain, nausea/vomiting five times daily, lightheadedness, poor balance, and blurry vision. Labs notable for potassium 3 mmol/L, glucose 349 mg/dL, Cr 2.17 (baseline ~1.5) and prolonged QTc 478 ms. On exam, she was ill-appearing, afebrile, tachycardic, abdomen diffusely tender to palpation with hypoactive bowel sounds and left pupil minimally responsive to light.

She was consulted by neurology on 10/17 for an episode of unresponsiveness. CT head w/o contrast showed no acute intracranial abnormality. CT angio head/neck showed no large vessel occlusion or rate-limiting stenosis. She was set for discharge on 10/18 but exam that day was notable for ophthalmoplegia, gait disturbance, and confusion. Brain MRI w/ contrast was ordered, and thiamine levels were drawn followed by immediate IV repletion. Thiamine was 46.2 nmol/L and MRI showed hyperintensities around the third ventricles on T2 flair and signs of subacute ischemic stroke in bilateral cerebellar hemispheres and left basal ganglia. **Final/Working Diagnosis:** This patient's case was unique because her clinical exam was notable for the triad of ophthalmoplegia, ataxia and confusion—leading us to a working diagnosis of WE. Her condition was most likely due to uncontrolled DM causing gastroparesis and thus chronic refractory nausea/vomiting leading to thiamine deficiency. While it is possible that her subacute ischemic stroke might have contributed to or even exacerbated her symptoms, her history of persistent nausea/vomiting and laboratory findings on admission made a strong case for WE.

**Management/Outcome:** During her stay, her nausea/vomiting was eventually controlled with prochlorperazine, metoclopramide, and scopolamine. Her thiamine was replaced over time with notable improvement in her ophthalmoplegia, ataxia, and cognition. The patient had been independent for self-care and mobility prior to admission, but she was discharged on 11/02/22 to an inpatient rehab due to a decline in functional status. She planned to follow-up with outpatient neurology, cardiology, and gastroenterology.

### References

Grover, M., Farrugia, G., & Stanghellini, V. (2019). Gastroparesis: a turning point in understanding and treatment. *Gut*, 68(12), 2238–2250. <https://doi.org/10.1136/gutjnl-2019-318712>

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Kohnke, S., & Meek, C. L. (2021). Don't seek, don't find: The diagnostic challenge of Wernicke's encephalopathy. *Annals of clinical biochemistry*, 58(1), 38–46. <https://doi.org/10.1177/0004563220939604>

Meggs. (2020). Wernicke encephalopathy associated with hyperemesis gravidarum. *The American Journal of Emergency Medicine.*, 38(3), 690.e3–690.e5. <https://doi.org/10.1016/j.ajem.2019.09.012>

Oudman, E., Wijnia, J. W., Oey, M. J., van Dam, M., & Postma, A. (2021). Wernicke-Korsakoff syndrome despite no alcohol abuse: A summary of systematic reports. *Journal of the neurological sciences*, 426, 117482. <https://doi.org/10.1016/j.jns.2021.117482>

### Learning Objectives

1. Identify how poor management of chronic conditions can result in acute processes with detrimental and potentially irreversible neurologic effects.
2. Treat broadly and empirically when faced with a set of nonspecific symptoms, especially in patients with multiple comorbidities.
3. Treat for suspected thiamine deficiency prior to laboratory confirmation.

### Abstract Reference Number: 3

Authors: Saloni Shrike MD

Coauthors: Austin Ciccati, DO, Family Medicine, PGY1, Mercy Hospital, Fort Smith, AR; Melissa Kuehl, DO, Internal Medicine, Core Faculty, Mercy Hospital, Fort Smith, AR

**Submission Type:** Unusual Case Presentation (a unique, rarely seen clinical scenario with discussion of a patient)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Poster Abstract Presentation

### Abstract Title: A Rare Case of Acute Lingual Tonsillitis with COVID-19 Infection

#### Abstract

Introduction:

Lingual tonsillitis is a rare cause of acute pharyngitis and is commonly seen in patients with a history of adenoidectomy and palatine tonsillectomy. The lingual tonsils are lymphoid tissue located at the base of the tongue and anterior to the epiglottis, forming the inferior aspect of the Waldeyer's ring. Similar to palatine tonsils, they are prone to infections, malignancy, abscesses, ulcers, and varices. While 50% of adult cases are attributed to rhinoviruses and coronaviruses, this is the first known case reporting COVID-19 as an underlying etiology of lingual tonsillitis. Patients with acute, infectious lingual tonsillitis present with fever and a wide range of aerodigestive symptoms (shown in Table1). Clinical manifestations can mimic fatal illnesses. Peritonsillar abscess, epiglottitis, foreign body ingestion, and malignancy should be excluded. Radiographic findings demonstrate associated inflammatory changes of the epiglottis and supraglottis, mistakenly ruling in a diagnosis of epiglottitis. In suspected epiglottitis direct laryngoscopy should be avoided; instead, indirect laryngoscopy can be diagnostic. Although extremely rare lingual tonsillitis can lead to abscess formation, extension into the epiglottis, and airway obstruction. However analgesics, antipyretics, corticosteroids, and/or antibiotics provide rapid symptomatic resolution. Case Presentation: A 19-year-old female with a history of adenotonsillectomy presented with fever, sore throat, neck pain, dysphagia, and drooling. Two days prior she tested positive for COVID-19. Oral examination showed cobblestoning of the hypopharynx with posterior oropharyngeal erythema and exudate. A contrast-enhanced neck CT demonstrated inflammation of the lingual tonsils and the base of the epiglottis, thickening of the aryepiglottic folds, edematous pre-epiglottic space, and enlarged jugulodigastric lymph nodes. The patient was suspected of having early epiglottitis. Flexible nasopharyngolaryngoscopy showed normal

epiglottitis but inflammation and hypertrophy of the lingual tonsils with pustules extending into the aryepiglottic folds.

**Final Diagnosis:** The patient was diagnosed with lingual tonsillitis and admitted for observation.

**Management & Outcome:** The patient was treated with intravenous (IV) ampicillin-sulbactam and dexamethasone. On follow-up examination 24 hours later, she reported decreased throat discomfort and was able to tolerate a regular diet. She was discharged home with oral amoxicillin-clavulanate and a 4-day course of prednisone 40 mg daily.

### References

Awai S, Miller BJ, Dimitrov L, et al. Lingual tonsil abscess: a rare, life-threatening cause of acute sore throat. *BMJ Case Reports* CP 2019;12:e229555.

De Alwis, A. C., & Kwon, S. (2021). LINGUAL TONSILLITIS: AN UNDER-RECOGNISED MANIFESTATION OF INFECTIOUS MONONUCLEOSIS. *Journal of paediatrics and child health*, 57(3), 459. <https://doi.org/10.1111/jpc.15367>

### Learning Objectives

- Identify the symptoms of lingual tonsillitis - Implement an appropriate strategy to evaluate patients with pharyngitis and differentiate the diagnosis from fatal diseases such as epiglottitis - Utilize appropriate tests to diagnose lingual tonsillitis

### Abstract Reference Number: 4

Presenting Author: Nupur Singh BA

Co-Presenter: Lorne Ian Taylor, MD

**Submission Type:** Case Presentation (A clinical scenario with discussion of a patient)

**Submission Category:** Surgery & Surgical Specialties

**Presentation Type:** Poster Abstract Presentation

### Abstract Title: A Rare Case of Deep Vein Thrombosis Alongside Segmental Arterial Mediolytic: A Life-Threatening Non-inflammatory, Nonatherosclerotic Vascular Condition

#### Abstract

**Introduction:** Segmental Arterial Mediolytic (SAM) is an incredibly rare, life-threatening condition characterized by dissections and aneurysms of the intra-abdominal splanchnic arteries. This condition often presents in the elderly with acute hemorrhage into the abdominal cavity with presence of dissections being the morphological hallmark. Exclusion of inflammatory arteritis from vasculitis and mycotic aneurysms is critical in preventing unnecessary immunosuppressive medications. The acute process has almost a 50% mortality rate, requiring urgent vascular intervention and medical therapy. We report a case of segmental arterial mediolytic further complicated by deep vein thrombosis resulting in a delicate balance between anti-coagulation and spontaneous peritoneal hemorrhage management. **Case Presentation:** A 69-year-old African American male with history of congestive heart failure and abdominal hernia presented to the emergency department with a 2-day history of sharp abdominal pain. Prior to the COVID-19 pandemic, patient intended to undergo surgery for hernia repair. Vital signs reported a hypotensive blood pressure of 72/49, low hematocrit of 30.6% and creatinine at 1.33. Labs alongside feeling intermittently lightheaded while standing indicated the need for further imaging. Initial CAT scan demonstrated evidence of blood in the abdomen. CT angiography found celiac artery aneurysm and superior mesenteric aortic aneurysm with multifocal dissection. The presence of fusiform aneurysms, dissections, and spontaneous peritoneal hemorrhage pointed directly to the diagnosis of Segmental Arterial Mediolytic. Ultrasound additionally identified a deep vein thrombosis in lower right superficial femoral vein into the left popliteal vein, and the intra-abdominal bleeding made him unable to undergo anticoagulation. The patient was immediately consulted with vascular surgery, recommending IVC filter placement, Cook Celect type through inferior venacavogram. **Final/Working Diagnosis:**

Segmental Arterial Mediolytic of celiac and SMA arteries alongside Deep Vein Thrombosis.

Management/Outcome/and or Follow-up:

The use of immunosuppressants or steroids was not recommended, as the arteriopathy is not autoimmune nor inflammatory, and the patient's vasculitis panel returned negative. Following successful procedure of IVC filter placement, the patient had no signs of acute hemorrhage extravasation requiring treatment at this time. Full anticoagulation methods were still refrained from to avoid spontaneous peritoneal bleeding again. With abdomen being benign, the patient will return in a month for follow-up, reporting a delicate case of SMA not requiring immediate intervention.

### References

<https://radiopaedia.org/articles/segmental-arterial-mediolysis?lang=us>

<https://pubmed.ncbi.nlm.nih.gov/21326567/> <https://pubmed.ncbi.nlm.nih.gov/21326567/>

### Learning Objectives

Adequately treat a life-threatening diagnosis of segmental arterial mediolysis in a time-sensitive manner  
Utilize radiographic imaging to accurately identify the major arteries involved in this case of segmental arterial mediolysis  
Value the rarity of a classic presentation of segmental arterial mediolysis to better recognize this arteriopathy in future differential diagnoses

### Abstract Reference Number: 5

**Authors:** Janie Hu, MD

**Co-Author:** Alexander T. Phan, MD, Internal Medicine, PGY2, Arrowhead Regional Medical Center, Colton, California

**Submission Type:** Unusual Case Presentation (a unique, rarely seen clinical scenario with discussion of a patient)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Poster Abstract Presentation

**Abstract Title:** Giant Bladder Stone in Association with Kidney stones, Urinary stasis, and Urinary Tract Infection

### Abstract

Introduction

Bladder stones are usually composed of calcified material and typically weigh less than 100g. There is a higher prevalence of bladder stones in males, and stones tend to form secondary to urinary stasis, but may also form in otherwise healthy individuals. Additionally, foreign bodies in the bladder can predispose to stone formation. Renal calculi, most commonly calcium oxalate or calcium phosphate, can also become trapped in the bladder. In exceptionally rare cases, bladder stones measure >10cm in diameter and weigh >100g. These entities have been referred to as 'giant' bladder stones within the limited literature. Minimal data exist on the etiology, epidemiology, composition, and pathophysiology of giant bladder stones. We present a case of a 75-year-old male with a giant bladder stone composed of 100% carbonate apatite, measuring 10x6cm and weighing 150.76g. Case Presentation A 75-year-old male with a history of recurrent kidney stones presented with a non-draining urinary catheter for one day. He had the catheter placed 1 month prior due to an obstructing bladder stone. Initially, the patient reported dull, non-radiating lower abdominal pain. On physical exam, patient had tenderness to palpation of the suprapubic region. Pertinent labs include Ca 10.4, PTH 90, UA 3+ leukocyte esterase, positive nitrite, 3+ blood, packed WBCs and RBCs, and 1+ bacteria. CT abdomen pelvis without contrast showed a large bladder stone with bladder wall thickening, bilateral renal hydronephrosis, and prostatomegaly. Urine culture grew *Klebsiella pneumoniae* ESBL and patient was treated with Meropenem. Working/Final Diagnosis Based on imaging, patient had an enlarged prostate with concurrent urinary tract infection and giant bladder stone leading to severe bilateral renal hydronephrosis.

Management/Outcome Patient underwent an open cystolithotomy and a 10x6cm giant bladder stone weighing 150.76g was retrieved. Pathological analysis revealed stone composition of 100% carbonate apatite. Patient tolerated surgery well and was discharged with plan for outpatient urology follow up.

## References

Napitupulu, T., Susanto, M., Duma, G., & Yudha Rahman, E. (2022, July 15). Giant Bladder Stone: A case report and literature review. *JMA journal*. Retrieved November 15, 2022, from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9358262/> Katsimperis, S., Pikramenos, K., Livadas, K., Chatzikrachtis, N., & Bellos, T. T. (2022, May 29). Giant Bladder Stone: A case report. *Cureus*. Retrieved November 15, 2022, from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9239294/> Agrawal, R., Taha, K., Poudyal, A., Vidal, P., & Bhattacharjee, P. (2019, July 17). Giant bladder stone in association with severe kidney injury. *Oxford medical case reports*. Retrieved November 15, 2022, from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6637460/> Leslie, S. W., Sajjad, H., & Murphy, P. B. (2022, August 1). Bladder Stones. *StatPearls*. Retrieved November 15, 2022, from <https://www.ncbi.nlm.nih.gov/books/NBK441944/> Qaader, D. S., Yousif, S. Y., & Mahdi, L. K. (2006). Prevalence and etiology of urinary stones in hospitalized patients in Baghdad. *World Health Organization*. Retrieved November 15, 2022, from <https://www.emro.who.int/emhj-volume-12-2006/volume-12-issue-6/prevalence-and-etiology-of-urinary-stones-in-hospitalized-patients-in-baghdad.html>

## Learning Objectives

Upon completion of this lecture, learners should be better prepared to:

1. Assess risk factors for development of a giant bladder stone (for example, there is a higher prevalence of bladder stones in males than in females, which can be explained by the pathophysiology in how these stones are formed - namely, bladder stones tend to form secondary to urinary stasis, such as in the setting of benign prostatic hyperplasia)
2. Identify the most likely etiology of a bladder stone based on the composition of stone (for example, renal stones are most commonly composed of calcium oxalate or calcium phosphate; therefore, if a bladder stone is made of those materials, it should be suspected that the etiology is a translocated renal stone)
3. Diagnose giant bladder stones and to treat surgically through cystolithotomy (our patient had a delay in care because initial recommendations at another hospital was to monitor for passing of the bladder stone)

## Abstract Reference Number: 6

Authors: Ann Carol Brasswell BS

Coauthor: Ann Carol Braswell, BS, UABSOM, Birmingham, AL; Madeline Bald, BS, UABSOM, Birmingham, AL; Gabriela Fonseca, BS, UABSOM, Birmingham, AL; Edgar Soto, MSPH, UABSOM, Birmingham, AL; Amanda Fang, MD, Plastic Surgery, PGY1, UAB, Birmingham, AL; Prasanth Patcha, MD, Plastic Surgery, Assistant Professor of Surgery, UAB, Birmingham, AL

**Submission Type:** Clinical Science Presentation (A well-defined basic or clinical research project)

**Submission Category:** Surgery & Surgical Specialties

**Presentation Type:** Poster Abstract Presentation

**Abstract Title: Evaluating Outcomes in Post-Mastectomy Tissue Expansion Following Implementation of the COVID-19 Mask Mandate**

## Abstract

Introduction: Tissue expansion/implant-based breast reconstruction is the most common breast reconstructive strategy in the United States accounting for approximately 65% of all breast reconstructions. While the procedure is generally regarded as safe, there are several associated complications including cellulitis, abscess, hematoma,

and seroma. That said, it is believed that surgical face masks may provide a protective barrier between upper respiratory bacteria in surrounding personnel and a patient's wound potentially decreasing the likelihood of infection. The purpose of this study is to understand the effects of mandatory COVID-19 masking mandates on post-mastectomy tissue expansion complications. Methods: An IRB-approved retrospective review was completed on all female patients who underwent unilateral or bilateral tissue expansion following mastectomy at our tertiary care center in 2017 (prior to the mandatory COVID-19 mask mandate) and 2021 (following the implementation of the mandate). Variables included were patient demographics, procedure information, and postoperative outcomes. Statistical analysis was performed using t-tests and chi-squared tests. Results: The analysis included 67 patients in the pre-mask mandate group and 81 patients in the post-mask mandate group. Overall, the cohort had an average age of 51 years (SD); 78% of the cohort was white, 19% black, and 3% other. There was no significant difference in age at procedure, BMI, smoking status, or history of diabetes mellitus between the two groups. Drains were used in 85% of the pre-mask mandate group and 86% of the post-mask mandate group ( $p=0.815$ ). There was no difference in total drain output between the two groups ( $1065.85\text{mL} \pm 780.85\text{mL}$  vs.  $945.45\text{mL} \pm 786.56\text{mL}$ ;  $p=0.528$ ). The post-mask mandate cohort had a significantly lower minor complication rate when compared to the pre-mask mandate cohort (25% vs. 42%;  $p<0.05$ ). However, there was no significant difference in major complication rate between the pre- and post-mask mandate groups (36% vs. 27%;  $p=0.257$ ). Conclusion: Despite similar demographics in our pre-mask mandate and post-mask mandate groups, there was a significantly lower rate of minor complication after the implementation of the mask mandate. A larger, more extensive retrospective review will be performed to further analyze these results.

#### References

Leyngold MM, Stutman RL, Khiabani KT, et al. Contributing variables to post mastectomy tissue expander infection. *Breast J.* 2012;18(4):351-356. doi:10.1111/j.1524-4741.2012.01253.x  
Huber KM, Zemina KL, Tugertimur B, et al. Outcomes of Breast Reconstruction After Mastectomy Using Tissue Expander and Implant Reconstruction. *Ann Plast Surg.* 2016;76 Suppl 4:S316-S319. doi:10.1097/SAP.0000000000000675

#### Learning Objectives

Upon completion of this lecture, learners should be better prepared to discuss the effect of masking on post-mastectomy tissue expansion.

#### Abstract Reference Number: 7

**Author: Lindsay Ling, MD**

**Submission Type:** Case Presentation (A clinical scenario with discussion of a patient)

**Submission Category:** Emergency & Disaster Medicine

**Presentation Type:** Oral Abstract Presentation (On-Site in Memphis ONLY - 10 minute presentation)

#### Abstract Title: An Unusual Presentation of a Burst Fracture After Falling In the Commode

##### Abstract

Introduction: While spinal fractures are frequently associated with major trauma, such as falling from a great height or a motor vehicle accident, it is important to recognize that trauma can occur even after a minor accident. By recognizing trauma in unusual situations, prompt emergency medical care can be provided in a timely manner. Case Presentation: A 74-year-old female with a past medical history of osteoporosis presents to the emergency department (ED) via EMS after back pain that began last week. One week ago, she was attempting to sit on the toilet, when she fell into the toilet. Since then, she has had upper and lower back pain and states that her pain is severe. The pain is constant and movement/exertion makes her symptoms worse. She followed up with her

primary care doctor and received a Toradol shot and hydrocodone, but this did not improve her pain. Upon presentation, vitals were not remarkable and she was not in distress. Physical exam demonstrated mild tenderness in the cervical and lumbar spine without step-offs. She had 5/5 strength in all extremities with intact reflexes and sensation.

Labs, including CBC and chemistries, were unremarkable. Thoracic spine CT demonstrated a subacute burst fracture at the inferior endplate of T10, with approximately 20 to 30% loss of vertebral body height. Lumbar spine demonstrated subacute fractures of the left L1, right L3, and bilateral L2 transverse processes. A cervical spine CT and CT of the chest, abdomen, and pelvis were unremarkable. Diagnosis: Stable thoracic burst fracture  
Management: Upon speaking to neurosurgery, they requested an MRI of the thoracic spine, which demonstrated similar findings. They endorsed that the patient should be put in a TLSO brace with a lateral view x-ray after placement with follow up in 2 weeks for repeat imaging, given that her burst fracture was considered stable. However, if unstable, management typically includes early surgical intervention with unstable burst fractures defined as: angulation of the spine greater than 20 degrees, subluxation or dislocation present, or greater than 50% spinal canal compromise.<sup>1</sup>

## References

1. Zdeblick, Thomas A. Burst Fractures: Treatment and Recovery - Spineuniverse. 4 Mar. 2016, <https://www.spineuniverse.com/conditions/spinal-fractures/burst-fractures-treatment-recovery>.

## Learning Objectives

Objectives: This case illustrates 1) the importance of recognizing that trauma can occur after a minor-appearing accident, 2) the importance of a thorough physical exam, and 3) the importance of inter-professional management in patients and 4) knowing the different modalities for treating burst fractures based on classification of stable versus unstable.

## Abstract Reference Number: 8

Author: Aisha Kazi, DO

Coauthor: Aisha Kazi, DO, ARCOM, Fort Smith, Arkansas ; Zohaib Abbas, DO, ARCOM, Fort Smith, Arkansas ; Rahil Kazi MD, Cardiovascular Physician, Warner Robins, Georgia

**Submission Type:** Unusual Case Presentation (a unique, rarely seen clinical scenario with discussion of a patient)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Poster Abstract Presentation

## Abstract Title: Unique Case of Post-Pacemaker Placement Complication

### Abstract

**Introduction:** Often, there are minimal risks associated with pacemaker devices and the placement procedure itself. The benefits of a pacemaker device significantly outweigh the risks, and is therefore, typically recommended. The most common complications of pacemaker placements include lead dislodgement, infection, or pneumothorax—just to name a few. However, it is less common to see lethal complications such as pericardial effusion and early recognition is crucial.

**Case Presentation:** A 72-year-old male with a past medical history of atrial fibrillation on oral anti-coagulation, and significant symptomatic pauses had received a pacemaker. He was discharged on the same day of the procedure. The following day, he presented to the office with chest pain and brief loss of consciousness. On physical exam, the patient was hypertensive with absent JVP. A stat echocardiogram revealed 2 cm of global pericardial effusion and no signs of tamponade. At this point, he was treated with IV fluids and anti-coagulation was discontinued. Once stabilized, he was discharged, and subsequent echocardiograms revealed persistent pericardial effusion. The patient was taken back to the catheterization lab and lead revision was performed. A few weeks later, repeat echocardiograms finally revealed resolution of PE. **Discussion:** In the past, oral anti-coagulation was discontinued



in patients presenting with atrial fibrillation prior to a pacemaker placement. Although, the risk of bleed is high, it is more common to see pocket bleeding as opposed to pericardial effusion. In this case, the patient's lead perforated the myocardium, resulting in pericardial effusion, which did not resolve with discontinuation of anti-coagulation up to several weeks. Once the patient received a revision of his pacemaker wire, the pericardial effusion regressed and was completely resolved. Conclusion: This patient's unique complication of pericardial effusion with discontinued oral anti-coagulation in atrial fibrillation poses a significant concern of whether pacemaker devices should be placed in the presence or absence of anti-coagulation treatment.

## References

[https://www.sciencedirect.com/science/article/pii/S1547527105017613?casa\\_token=JURuUf8YgLkAAAAA:Sn2RcooOG4xv-A\\_Med7T8i7atBcMGKzoS5a\\_ptWMwJP0DXwM8uInSRD8eIVy\\_m0g5ULHCY](https://www.sciencedirect.com/science/article/pii/S1547527105017613?casa_token=JURuUf8YgLkAAAAA:Sn2RcooOG4xv-A_Med7T8i7atBcMGKzoS5a_ptWMwJP0DXwM8uInSRD8eIVy_m0g5ULHCY)

## Learning Objectives

1. Recognition of uncommon lethal complications of post-pacemaker placements 2. The continuation of anti-coagulation during placement of pacemaker devices

## Abstract Reference Number: 9

Author: Alexa rodriguez MD

Coauthors: Amanda V Hardy, MD, Internal Medicine-Pediatrics, PGY3, UTHSC, Memphis, TN; Nathaniel G Rogers, MD, Department of Medicine, UTHSC, Memphis, TN.

**Submission Type:** Case Presentation (A clinical scenario with discussion of a patient)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Oral Abstract Presentation (On-Site in Memphis ONLY - 10 minute presentation)

## Abstract Title: A Clinical Conundrum: DHTR with Progression to MOFS in a Patient with SCD with Limited Therapeutic Options

### Abstract

Introduction Delayed hemolytic transfusion reaction (DHTR) and multi-organ failure syndrome (MOFS) are rare complications of sickle cell disease (SCD)<sup>1,2</sup>. DHTR can resemble a vaso-occlusive crisis (VOC),<sup>1</sup> and MOFS can evolve from either disease process<sup>1,3</sup>. We describe an unusual presentation of rapidly evolving multiorgan failure in the setting of DHTR with limited therapeutic options due to alloimmunization. Case Presentation:

A 39-year-old male with a history of mild sickle cell disease presented to our facility with fatigue, jaundice, abdominal pain, and oliguria. Two weeks prior, he was admitted to an outside facility for a VOC, just his second in over two decades, following a spider bite. He required transfusion before being discharged in stable condition. Following discharge, the patient reported having progressive worsening of his symptoms. Though hemodynamically stable on admission, physical exam revealed scleral icterus, jaundice, and oozing from his oral mucosa. The patient's initial work-up was notable for anemia, hyperbilirubinemia, metabolic acidosis with acute renal failure, a normal fibrinogen, and a significant coagulopathy. He had a weakly weakly positive DAT for IgG and C3D though outside records revealed a negative antibody screen prior to his transfusion. The blood bank reported reactivity against all donors, signifying that he had an alloantibody to an antigen ubiquitous to the pool.

Final/Working Diagnosis With his history of transfusion two weeks prior, positive DAT, elevated LDH, and indirect hyperbilirubinemia, the patient's clinical picture was most consistent with DHTR with subsequent hyperhemolysis. Management/Outcome/and or Follow-up The patient was initiated high-dose steroids and IVIG. Despite this, he deteriorated with worsening renal failure and, atypical in DHTR, fulminant liver failure with hyperammonemia and coagulopathy. Within twelve hours, he was encephalopathic with hemodynamic instability, prompting transfer to the ICU where the team considered transfusing the most compatible unit available. However, understanding the risk of further hemolysis, transfusion was held. Hematology tried to obtain sutimlimab but were unable to procure

it in time. He declined, requiring intubation and pressors, before succumbing to his disease process 55 hours after admission.

### References

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### Learning Objectives

LEARNING OBJECTIVES Recognize the typical presentation of DHTR, including time from transfusion Understand the challenge of managing DHTR in the setting of hyperhemolysis and multiorgan failure

### Abstract Reference Number: 10

Authors: Lesley Balbirnie MD

Coauthors: Renato Ferrandiz-Espadin, MD, Internal Medicine, PGY1, NAMC; Richi Kashyap, MD, Internal Medicine, PGY2; Alexander Sewchand, MD, Medical Graduate

**Submission Type:** Case Presentation (A clinical scenario with discussion of a patient)

**Submission Category:** Public Health & Environmental Medicine

**Presentation Type:** Poster Abstract Presentation

### Abstract Title: Keep your eyes open: Ocular syphilis in a patient with secondary syphilis

#### Abstract

Ocular manifestations of syphilis can occur at any stage of the disease with varied clinical presentations. Syphilis can involve almost any ocular structure, but posterior uveitis and panuveitis are the most common presentations, usually unilateral, and if untreated may lead to blindness. 43-year-old white female presented with progressive right eye pain associated with blurry vision and black spots. The patient also developed multiple non-pruritic red papules, 5 to 10 mm in size on the face, trunk, and extremities. The patient was taking spironolactone 25 mg daily for hypertension and NSAIDs over the counter. She mentioned having 3 sexual partners in the past 8 months without barrier contraception. There was no prior history of blood transfusions or recent travel, sexually transmitted diseases, or autoimmune diseases. The patient was seen by an ophthalmologist who described a tough view of the posterior segment with 20/800 uveitis OD with associated posterior synechiae of iris OD and optic nerve swelling. The left eye was unaffected and was given one dose of triamcinolone, atropine sulfate 0.01% was given to the affected eye twice a day, and daily prednisolone acetate 1% in both eyes without improvement. The patient reported mild improvement of blurriness and tested positive for RPR, Treponema pallidum antibodies (FTA-Abs) and ANA 1/180 speckled pattern Hep C abs. HIV serology was negative. The patient was hospitalized and a lumbar puncture was done as the patient started complaining of headaches during hospitalization, but the CSF analysis was normal. The patient was started on aqueous crystalline penicillin G, 3 to 4 million units IV every 4 hours for a total of 14 days. The patient noticed an improvement in vision and the papules decreased in size. The patient's partner was also counselled for outpatient treatment. In 2020, 133,945 cases of syphilis were reported in the US. A total of 12.7 primary and secondary syphilis cases per 100,000 were reported in Alabama, with increasing cases each year. Syphilis is a very protean disease and should be considered before starting treatment in a patient with otherwise unexplained unilateral acute vision loss, especially compounded by skin manifestations.

In this case, uveitis appeared days before skin manifestations. Point-of-care tests could be done if there is high suspicion and treatment should be started as soon as possible.

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### Learning Objectives

Identify syphilis as a reemergent STD cause of acute vision loss

Emphasize on the treatment of contacts to reduce spread of disease

Discuss the increasing cases of syphilis in Alabama to raise awareness of early diagnosis

### Abstract Reference Number: 11

Authors: Lauren Aronson BS

Coauthor: Renato Ferrandiz-Espadin, MD, Internal Medicine, PGY1, NAMC; Richi Kashyap, MD, Internal Medicine, PGY2; Alexander Sewchand, MD, Medical Graduate

**Submission Type:** Clinical Science Presentation (A well-defined basic or clinical research project)

**Submission Category:** Bioethics & Medical Education

**Presentation Type:** Poster Abstract Presentation

### Abstract Title: A Pediatric Model for the Demonstration of Real-Time Ultrasound-Guided Lumbar Puncture

#### Abstract

**Background:** In the pediatric field, lumbar puncture (LP) is a common procedure performed in the hospital setting to rule out sources of infection, bleeding, or inflammatory processes. Point-of-care ultrasound (US) has shown great utility in many clinical scenarios because of its accessibility, speed, and safety profile. Combining ultrasound with LP allows for visualization of anatomical landmarks and precise navigation by angulating the probe to see the needle trajectory. **Methods:** This project sought to design an ultrasoundable, silicone-based educational model for pediatric lumbar puncture that allows for a full simulation of the procedure. Image processing of a 29-month-old patient's abdomen/pelvis CT scan was completed using Mimics-Materialise. The vertebral bones were segmented from below T11 and 3D-printed with liquid resin using a Stratasys J55 polyjet printer. A skin molding and a base were printed with PLA plastic using an FDM 3D printer. Flexible tubing with a saline bag attachment was inserted through the vertebral column to represent the spinal canal filled with cerebrospinal fluid. Ecoflex 00-30 silicone was used to resemble the thin outer skin layer, while Dragon Skin 10 silicone was added to the rest of the model. After the silicone completely cured, the model was brought to Nemours Children's Health to assess its ultrasound penetrability and perform a lumbar puncture on the model. **Results:** The silicone model demonstrated exceptional ultrasound permeability, with sufficient representation of the bony structures and spinal column. An ultrasound-guided lumbar puncture was successfully performed with clear visualization of the needle entering the spinal canal. The respective cost of materials and total production time were approximately \$300 and 60 hours, compared to the average \$1500-2000 for a commercially available ultrasoundable pediatric lumbar trainer. **Conclusion:** An ultrasoundable, silicone model with 3D printed anatomical structures is an affordable, functional entity that can accurately demonstrate a pediatric lumbar puncture procedure. The ability to successfully visualize the model's anatomical landmarks with ultrasound, while simultaneously performing a LP is a promising outcome worth further inquiry. Future studies will be made to assess this model's capacity to improve trainee competency and increase the usage of US-guidance with lumbar puncture in clinical settings.

### References

## Learning Objectives

- Explain the utility of real-time ultrasound guidance for lumbar puncture
- Perform an ultrasound-guided pediatric lumbar puncture

## Abstract Reference Number: 12

Author: Tatjana Mortell, BS

Co-Author: Amanda Watters, M.S., Medical Student 2nd Year, Tulane University School of Medicine, New Orleans, Louisiana; Jack Blitz, M.S., Medical Student 2nd Year, Tulane University School of Medicine, New Orleans, Louisiana; Victoria K. Ierulli, M.S., Research Assistant, Department of Orthopaedic Surgery, School of Medicine, Tulane University, New Orleans, Louisiana, USA; John Lefante PhD, Professor and Chair, Department of Biostatistics and Data Science, School of Public Health and Tropical Medicine, Tulane University, New Orleans, Louisiana, USA; Mary K. Mulcahey, MD, Associate Professor, Department of Orthopaedic Surgery, School of Medicine, Tulane University, New Orleans, Louisiana, USA.

**Submission Type:** Clinical Science Presentation (A well-defined basic or clinical research project)

**Submission Category:** Surgery & Surgical Specialties

**Presentation Type:** Oral Abstract Presentation (On-Site in Memphis ONLY - 10 minute presentation)

## Abstract Title: Publishing Characteristics of Sports Medicine Research Over a 15-Year Time Interval: A Review of JBJS from 2007-2021

### Abstract

**Background/Purpose:** Orthopaedic surgery is traditionally a male-dominated field, with a predominant gender gap. Sports medicine is one of the most popular orthopaedic subspecialties; however, gender gaps still persists despite equal numbers of male and female medical students<sup>1</sup>. Understanding the trends in sports medicine research over time will offer insight into progress and innovation within the field. **Goals:** The purpose of this study was to evaluate publishing characteristics of sports medicine studies in the Journal of Bone and Joint Surgery (American Volume) (JBJS-A) from 2007 to 2021. **Methods/Design:** Sports medicine studies in the JBJS-A from 2007-2021 were identified and organized by study type, number of authors, sex of the authors, academic degree(s) of the first and last authors, level of evidence, country of publication, citations, and use of patient-reported outcome measures (PROM). **Results/Findings:** 784 studies that were published from 2007 to 2021 were reviewed. The most common type of study published over this period was clinical therapeutic (n=245, 48.1%). There was an increase in the publication of clinical prognostic studies (17.5% to 25%; n=26; p=0.0369) (Fig. 1), as well as a significant increase in the use of PROMs (12.5% to 47.5%, n=175, p<0.001). The number of authors increased over the study period (4.8 to 6.3), but there was no significant increase in female authorship over time. Only 15% of the 784 studies included a female author, with an average of 0.8 female authors per paper (range 0-8) compared to 4.6 males (range 1-14). Additionally, first and last female authorship did not increase significantly over time. **Conclusion:** In this review, publication characteristics were used as a metric to identify trends in research diversity, inclusion, and quality. Although the significant increase in use of PROMs in articles indicates that the quality of research has improved over the 15-year period, the gender disparity in sports medicine research persists. Our study found that only 11% of all first authors and only 9% of senior authors were female. Despite many areas of growth, this study suggests that there is room for improvement of authorship diversity in orthopaedic sports medicine research.

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biggest gender imbalances. American Medical Association. Retrieved November 8, 2022, from <https://www.ama-assn.org/medical-students/specialty-profiles/these-medical-specialties-have-biggest-gender-imbalances>

### Learning Objectives

#### Learning Objectives

- Recognize the gender disparity within the sports medicine subspecialty of orthopaedic surgery.
- Identify female author publishing trends in a prominent orthopaedic surgery journal.
- List the article types that are published in JBJS Sports Medicine section and be able to describe article trends.

### Abstract Reference Number: 13

Authors: Vagharsh Antaneisan MD, MPH

Co-Author: Alam Rehan, MD, Internal Medicine, PGY2, Norton Community Hospital, Norton, Virginia; Garcia Kenny, MD, Internal Medicine, PGY2, Norton Community Hospital, Norton, Virginia; Masud Parish, MD, Internal Medicine, PGY1, Norton Community Hospital, Norton, Virginia; Newberry Brian, DO, Program Director/Internal Medicine, Norton Community Hospital, Norton, Virginia

**Submission Type:** Unusual Case Presentation (a unique, rarely seen clinical scenario with discussion of a patient)

**Submission Category:** Click to Select

**Presentation Type:** Oral Abstract Presentation (On-Site in Memphis ONLY - 10 minute presentation)

### Abstract Title: Intermittent Complete Heart Block in Airforce Engineer

#### Abstract

Introduction ECG findings such as early repolarization and 1st and 2nd degree AV blocks are well known in competitive athletes. These rhythms are potentially benign, but they can also predispose individuals to a plethora of dangerous arrhythmias. In this case presentation we will discuss an intermittent complete heart block with junctional escape rhythm in a 46-year-old Airforce engineer who routinely exercises recreationally. We will discuss our clinical reasoning for avoiding pacemaker placement in such a case.

Case Presentation A 46-year-old male initially presented to his local ED with chief complaint of chest pain. ED work-up was notable for slight elevation in blood pressure and negative troponins. ECG showed ST elevation in leads 1 and 2, T-wave inversion in lead 3 and V1. His echocardiogram was unremarkable, and he was subsequently discharged with instructions for outpatient exercise stress testing. During his stress test, the patient was found to be in Type 2, 1st degree AV block which resolved as he commenced the exercise regimen with a maximum HR of 190 beats per minute and minimum HR of 58 beats per minute. He was referred to cardiology for further management of asymptomatic Type 2 heart block. A few months later, repeat EKG done by his cardiologist showed complete heart block with HR of 44 beats per minute; at that time, he was asymptomatic. The patient was then referred to electrophysiology (EP) for further management of complete heart block and possible pacemaker placement. In the EP office, EKG showed intermittent complete heart block with junction escape rhythm at rate of 40. Management

During presentation in EP office, the patient reported being in good health and denied any symptoms. He reported running an average of 17 miles per week in addition to resistance weight training without any chest pain or shortness of breath. Given his narrow complex junctional beats and lack of symptoms, it was decided to avoid pacemaker placement and to closely monitor the patient.

Outcome and or Follow-up

Patient tolerated the plan without complication. He continued to stay asymptomatic and was able to continue his job at Airforce.

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Intrinsic Electrical Remodeling Underlies Atrioventricular Block in Athletes | Circulation Research (ahajournals.org)  
Heart and Athlete - PMC (nih.gov)

### **Learning Objectives**

-Different degrees of AV block can occur in athletes due to changes in vagal tone -Not all AV blocks require pacemaker placement, some can be treated with medication such as AV block in the setting of acute MI or Lyme disease -Differentiating chronic complete heart block vs intermittent complete heart block

### **Abstract Reference Number: 14**

Authors: Nupur Singh BA

Co-author: Caroline Reidy, BA, Medical Student 2nd year

Steven Laxton, BA, Medical Student 4th year

Donald Gaines, BA, Medical Student 4th year

**Submission Type:** Clinical Science Presentation (A well-defined basic or clinical research project)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Poster Abstract Presentation

**Abstract Title: The Epidemiology, Diagnosis, and Prognosis of Wernicke's Encephalopathy in a Mid-South Teaching Hospital.**

### **Abstract**

Background/Purpose: Wernicke's encephalopathy (WE) was first characterized by Carl Wernicke in 1881 where he saw a constellation of symptoms: ataxia, nystagmus or ophthalmoplegia, and changes in mentation that was later termed "Wernicke's Encephalopathy." Mental status changes are associated with midline thalamic nuclei misconnections, ocular dysfunction result from lesions of the pontine tegmentum, and gait is caused from connections between the vestibular abnormalities and cerebellar vermis. Each of these parts require thiamine in several of its enzymatic reactions, emphasizing thiamine's vitality in daily living. Several reports exist where all three symptoms of the classic triad of WE are not often seen. In fact, only 16-33% of patients show the triad on initial examination. Other ways WE manifests include appetite loss persisting for several weeks or hyperemesis gravidarum. These non-classical symptoms complicate diagnosis, increase the chance of developing Wernicke Korsakoff syndrome, and provide reasoning for its prevalence even after its original identification over two centuries ago. WE still exists today with a prevalence in the general population estimated from 0.4 - 2.8%. Stronger identification of risk factors and prevention methods are key to reducing prevalence and would serve as progress in the scientific community. Goals: The creation of risk awareness and establishment of practical considerations of predisposing factors outside of the classic triad to consciously observe for to administer thiamine preemptively. Methods/Design: The Cerner EMR from Regional One Hospital in Memphis, Tennessee was examined to identify individuals diagnosed with Wernicke's Encephalopathy. In data collection for these patients, risk factors, existing diagnoses, and symptoms were recorded to have a complete understanding of the patients' reasons for developing WE. Results/Findings: 35 unique patient cases were identified, and a variety of causes and linkages were explored in data collection. Linked causes to the development of WE include alcoholism, pancreatitis, cachexia from malignancy, hyperemesis gravidarum, hepatitis C, and GI disease causing malabsorption, among others. Conclusions/Implication: In the conclusion of this retrospective case review, we plan to have recommendations based off the main risk factors established at hand. This will create practical considerations for the monitoring of thiamine levels alongside the adequate and timely administration of thiamine to preserve brain function.

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<https://link.springer.com/article/10.1007/s11604-020-00989-3>

### Learning Objectives

Evaluate tangible ways in which Wernicke's encephalopathy can be better identified for patients at higher risk from social or health reasons  
Treat patients with a sufficient amount of thiamine prior to the development of Wernicke Korsakoff syndrome  
Establish practical considerations of populations at risk for WE such as pregnant women, alcoholics, and those with malignant cancers

### Abstract Reference Number: 15

Authors: Katherine Ruiz Gonzalez

**Submission Type:** Case Presentation (A clinical scenario with discussion of a patient)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Poster Abstract Presentation

### Abstract Title: Myroides Odoratimimus Blood Stream Infection Presenting with Encephalopathy and Short-Term Memory Loss

#### Abstract

**Introduction:** Myroides spp. are yellow-pigmented, opportunistic gram-negative bacteria. Very few cases have been reported, but the incidence has been increasing over the past years. They were primarily associated from clinical sources; however, a number of studies have indicated that they are widely available in the aquatic environment. These infections pose a challenge when it comes to treating them, because it produces a biofilm that makes it resistant to multiple antibiotics. We present a rare case of Myroides odoratimimus blood stream infection in a patient presenting with encephalopathy and short-term memory loss.

**Case Presentation:** A 65-year-old male with a PMH of type 2 diabetes mellitus and CHF presented to the ED after being found at home with altered mental status. He was found in the floor covered in human feces, maggots and flies. He was last seen 4 days ago while walking his dog. The last event he remembered occurred 8 days prior to admission and he had no recollection of the events that happened in the last 4 days. Vitals were stable except for moderate hypothermia at 29.8 C. Laboratory tests showed profound acidosis, rhabdomyolysis and acute kidney injury. CT scan of the head and C-spine were negative for acute pathology. Upon physical examination, he had retiform purpura with cutaneous necrosis formation over his chest and legs. Blood and tissue cultures were collected. Due to the perplexing skin lesions and his immunocompromised state, the differentials included, but were not limited to vasculitis, invasive mucormycosis, anticoagulation-induced necrosis, fungal/bacterial sepsis

and embolic event. Due to concerns for angioinvasion, he was started on Vancomycin, Cefepime and Flagyl. He was given IV fluid resuscitation, bicarbonate and placed on bair hugger for hypothermia. Final diagnosis: Blood cultures grew *Myroides odoratimimus*. Tissue cultures were positive for *Enterobacter cloacae*, *Candida parapsilosis* and *Staphylococcus saprophyticus*. Management/Follow-up: When culture sensitivities came back, he was transitioned to Ciprofloxacin and completed a 10-day course of antibiotics. He was able to recover successfully and repeat blood cultures showed resolution of the infection. Even at the time of discharge, he still was not able to recall the events that led to his hospitalization.

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### Learning Objectives

Properly identify and treat blood stream infections with multi-drug resistant organisms in a timely manner

### Abstract Reference Number: 16

Authors: Emana Sheikh, BS

Co-authors: Jibrán Baig, Medical Student, Nova Southeastern University KPCOM, Ft. Lauderdale, FL; Eduardo Delaflor-Weiss, MD, Dept of Pathology, Veterans Affairs - WPB, Palm Beach, FL; James J. Stone, MD, Dept of General Surgery, Veterans Affairs - WPB, Palm Beach, FL

**Submission Type:** Case Presentation (A clinical scenario with discussion of a patient)

**Submission Category:** Surgery & Surgical Specialties

**Presentation Type:** Poster Abstract Presentation

### Abstract Title: Silently aggressive: An unusually quiet large B-cell lymphoma complicated by small bowel obstruction

#### Abstract

**INTRODUCTION:** Diffuse large B-cell lymphoma (DLBCL) is the most common non-Hodgkin lymphoma (NHL) subtype worldwide, comprising 22% of newly diagnosed B-cell NHL cases in the United States. Notoriously aggressive, DLBCL develops quickly, variably, and often harbors in extra-nodal areas, like the gastrointestinal tract. DLBCL is curable, thus early diagnosis and initiation of aggressive treatment is imperative. **CASE PRESENTATION:** We report a case of a 55-year-old Hispanic, veteran male with a history of mesenteric, non-Hodgkin's lymphoma, status post-chemotherapy and post-surgical biopsy. The patient appeared to be in remission for 7 months, during which he stayed compliant with post-procedural follow-up care and lymphoma surveillance. During a routine follow-up appointment, physical examination is unremarkable and a computed Tomography (CT) scan is ordered, which shows an enlarged lesion with air and fluid, and a large cystic, mesenteric mass indicating possible small intestinal perforation. Positron Emission Tomography (PET) scan of the area reveals a radioactive 'hot' mass at the same site of previous lymphoma with possible encroachment into small intestine. Complete blood cell (CBC) unveils a waning hemoglobin level of 1.8 suggesting severe anemia. Though patient's clinical presentation is silent, suspicion for threatened bowel and possible intestinal perforation prompt plan for immediate exploratory laparotomy. Upon laparotomy, the mass is visualized, and accompanied by a necrotic cystic mass. Further



dissection shows a perforated proximal ileum. Surgical pathology of the mesenteric mass confirms high-grade lymphoma, indicated by positive CD20, CD10, and bcl-6.

**FINAL DIAGNOSIS:** The patient is diagnosed with an infected mesenteric cystic mass, recurrent high-grade lymphoma, and intestinal perforation.

**MANAGEMENT/DISCUSSION:** The presented case emphasizes the significance of continued care and management in patients with a history of gastrointestinal disease secondary to DLBCL, even when in remission or presenting clinically silent. In this case, it was the combination of clinical evaluation, lab work-up, and imaging that permitted discovery of a surgically acute small bowel. Thus, the case exemplifies the impact of thorough follow-up care in detection of a treatable yet acute event, especially when patients are seemingly asymptomatic. As a result, increased literary availability promoting practices of both preventative and curative care further facilitates positive patient prognostication.

## References

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## Learning Objectives

The presented case discusses the significance of continued care and management in patients with a history of gastrointestinal disease secondary to DLBCL, even when in remission or presenting clinically silent. Upon completion of this lecture, learners should be better prepared to recognize the impact of thorough follow-up care in detection of a treatable yet acute event, especially when patients are seemingly asymptomatic.

## Abstract Reference Number: 17

Authors: Alexander Phan, MD, MS

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**Submission Type:** Clinical Science Presentation (A well-defined basic or clinical research project)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Poster Abstract Presentation

**Abstract Title: The Impact of Impaired Insulin Regulation on Severity of SARS-CoV-2 Infection: A Two-Year Retrospective Analysis**

**Abstract**

**Introduction**

Since the start of the Coronavirus Disease 2019 (COVID-19) pandemic, over six million deaths have been attributed to the virus, causing an international healthcare crisis with significant burden on healthcare workers. Diabetes mellitus, among other medical comorbidities, is a common disease that affects patients, disrupting glucose homeostasis and producing a pathophysiologic pro-inflammatory state [1-3]. Early retrospective studies have demonstrated the association of insulin dysregulation with COVID-19 disease burden [4-10]. To date, many studies have established an association between elevated blood glucose and elevated hemoglobin A1c (HbA1c) with COVID-19 disease severity [1-10]. Through this two-year retrospective analysis, we investigate the associations of HbA1c levels and hyperglycemia with COVID-19 mortality and disease severity in a Southern California county hospital.

**Methods**

This study is a retrospective chart review of patients ages 18 years or older admitted to our hospital with COVID-19 between January 2020 and December 2022. Exclusion criteria included COVID-19 in pregnancy and age under 18. The primary endpoints included mortality and COVID-19 illness severity. Illness severity was defined by degree of supplemental oxygen requirements (ambient air, low-flow nasal cannula, high-flow nasal cannula, non-invasive mechanical ventilation, and invasive mechanical ventilation). We checked for confounding based on chronic lung disease (defined as obstructive and restrictive lung disease).

**Results**

A total of 1993 patients were included in the final analysis. The average age was 53.4 years old (standard deviation = 18.6) with more than half (53.5%, n=1043) of the patients being males and 63.9% (n=1239) being Hispanic. About one quarter (28.6% n=557) of the studied population had a diagnosis of diabetes mellitus. There was a statistically significant association between diabetic status and mortality (16.1% vs 26.2%, p<0.0001). There was also a statistically significant correlation between serum hemoglobin a1c and blood glucose on admission (correlation coefficient = 0.6964, p<0.0001). Lastly, there was no statistical significance observed between serum hemoglobin a1c value and mortality status (p=0.2710). However, there was statistical significance on initial blood glucose on admission and mortality status (p<0.0001). Conclusion

A diagnosis of diabetes mellitus portends a poor prognosis in patients diagnosed with COVID-19, as there was an association between diabetes and COVID-19 related mortality. Hyperglycemia on admission laboratory findings was also significantly associated with mortality in patients diagnosed with COVID-19. Consistent with the current literature, glucose homeostasis may play a contributing factor to COVID-19 disease burden.

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### **Learning Objectives**

Measure the associations between diabetes, hemoglobin a1c, and initial blood glucose with COVID-19 severity and mortality. Demonstrate how insulin dysregulation may affect COVID-19 severity and mortality.

### **Abstract Reference Number: 18**

Authors: Benjamin Daines, BS, MBA

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**Submission Type:** Health System Science (Health care delivery, improving the quality of healthcare for patients and populations, and/or business of medicine)

**Submission Category:** Bioethics & Medical Education

**Presentation Type:** Oral Abstract Presentation (On-Site in Memphis ONLY - 10 minute presentation)

### **Abstract Title: Understanding students' and faculty members' use and perceptions of curriculum resources to guide practice**

#### **Abstract**

Background:

With the ever-expanding field of medicine, information overload continues to challenge both medical students and faculty. This study builds on prior research by examining students' use and perception of formal (faculty prescribed) and informal (peer recommended third party platforms) across cohorts. An understanding of how faculty and students perceive and dynamically utilize formal and informal resources over time is vital to successfully integrate commercial learning platforms into medical school curriculum and reduce unnecessary stress caused by resource overload. Methods:

This study utilized a sequential explanatory mixed methods design to compare the perception and use of informal resources (defined as commercial resources, such as UWorld, Sketchy, and Anki, recommended by peers) and formal resources (defined as traditional curriculum resources, such as lectures, self-directed learning modules, textbooks, and journal articles prescribed by faculty) by students. Four teams of medical students conducted ethnographic peer interviews (n=61), analyzed Instructional and Motivational Design Questionnaire (IMDQ) survey responses (n>200) and collected daily learning logs (n=267) to triangulate findings across cohorts.

Results/Findings: Students across the four cohorts consistently reported a preference for informal resources over formal curriculum commonly citing reasons such as the condensed presentation of information, medical relevance, visual features, and reinforcement of concepts in different ways. This preference was also evident in the IMDQ for overall motivation and all ARCS categories as shown below in figures 2 and 3. Thematic analysis suggests students found that informal resources allowed stronger and more complete understanding, had clear and concise presentations, and provided cues to improve retention, while formal resources lacked depth, organization, and clarity.

### Conclusions/Implications:

The results indicate that students' perceptions and use of curricular resources change as they progress through undergraduate medical school. Students' perceptions of formal resources prescribed by faculty start high (M1) and then decrease significantly, compared to their perceptions of informal resources that appear to start low but then increase substantially compared to formal resources. In particular, the findings suggest that students' motivation to use informal resources increased from years M1-2, and students use of both informal and formal resources level off and decline during years M3-4.

### References

#### Learning Objectives

An understanding of how faculty and students perceive and dynamically utilize formal and informal resources over time is vital to successfully integrate commercial learning platforms into medical school curriculum and reduce unnecessary stress caused by resource overload.

### Abstract Reference Number: 19

Authors: Amanda Hardy, MD

Co-author: Sara L. Cross, MD, Associate Professor and Interim Chief of the Division of Infectious Diseases, University of Tennessee Health Science Center, Memphis, TN

**Submission Type:** Unusual Case Presentation (a unique, rarely seen clinical scenario with discussion of a patient)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Oral Abstract Presentation (On-Site in Memphis ONLY - 10 minute presentation)

### Abstract Title: Our Best is Not Enough: A Fatal Case of Progressive Monkeypox Despite Use of Available Therapeutics

#### Abstract

##### Introduction

Since May 2022, monkeypox has impacted over 28,000 individuals nationally(1). While most cases are self-limited, some progress to severe disease(2). There are no FDA-approved treatments for monkeypox; tecovirimat and cidofovir have been used(2,3). We report a case of disseminated monkeypox with progression despite receiving tecovirimat and cidofovir.

##### Case Presentation

A 33-year-old male with advanced HIV presented to an outside hospital with malaise and scattered papular lesions. He was instructed to quarantine at home after PCR confirmed the diagnosis of monkeypox. He returned two weeks later with worsening lesions complicated by confluence and eschars. Relevant labs included a viral load of 47,100 copies/mL and a CD4 count of 10/uL. The infectious disease team initiated oral tecovirimat, albeit with delay due to availability and logistical issues. He was discharged with the remainder of the antiviral course but presented to our facility 28 days later with worsening lesions ranging from papules, vesicles, pustules, and scabs to coalesced lesions with associated central necrosis. Final/Working Diagnosis

The patient was diagnosed with refractory monkeypox with secondary dissemination. Management/Outcome/and or Follow-Up

The patient's worsening clinical condition despite prior therapy prompted CDC consultation. He received an extended course of intravenous tecovirimat, vaccinia immune globulin intravenous (VIVIG), and four doses of cidofovir. Despite these efforts, he deteriorated, and his course was complicated by sepsis, cytopenias, and multiorgan failure. After three difficult months, the patient went into cardiopulmonary arrest, ultimately succumbing to this disease. This severe case of monkeypox that progressed despite use of currently available therapeutics demonstrates the limited preliminary understanding of the management of monkeypox. Formal guidelines for therapeutics supported by well-designed randomized trials are urgently needed to inform the

management of patients with this condition, which can be fatal. Such investigations, like a current NIH-sponsored trial(4,5), should evaluate the effectiveness of currently available therapeutics. Moreover, for patients with disease refractory to current therapeutics, what are the predictive factors for disease progression and what novel treatment regimens should be used? While early data suggest monkeypox disproportionately affects men who have sex with men(1,6), research efforts should include an evaluation of factors beyond sexual practices that may increase the likelihood of disease progression or treatment failure.

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- 2 Centers for Disease Control and Prevention. Treatment Information for Healthcare Professionals. Published October 31, 2022. Accessed November 10, 2022. <https://www.cdc.gov/poxvirus/monkeypox/clinicians/treatment.html>
- 3 Centers for Disease Control and Prevention. Clinical Considerations for Treatment and Prophylaxis of Monkeypox Virus Infection in People with HIV. Published November 10, 2022. Accessed November 10, 2022. <https://www.cdc.gov/poxvirus/monkeypox/clinicians/people-with-HIV.html>
- 4 National Institutes of Health. U.S. Clinical Trial Evaluating Antiviral for Monkeypox Begins. Published September 9, 2022. <https://www.nih.gov/news-events/news-releases/us-clinical-trial-evaluating-antiviral-monkeypox-begins>
- 5 National Institute of Allergy and Infectious Diseases (NIAID). A Randomized, Placebo-Controlled, Double-Blinded Trial of the Safety and Efficacy of Tecovirimat for the Treatment of Human Monkeypox Virus Disease. Published November 14, 2022. Accessed November 14, 2022. <https://clinicaltrials.gov/ct2/show/NCT05534984>
- 6 Philpott D, Hughes CM, Alroy KA, et al. Epidemiologic and Clinical Characteristics of Monkeypox Cases — United States, May 17–July 22, 2022. *MMWR Morb Mortal Wkly Rep* 2022;71:1018-1022. DOI: <http://dx.doi.org/10.15585/mmwr.mm7132e3>

## Learning Objectives

- Be able to identify the currently available therapeutics for the treatment of monkeypox
- Recognize the limited knowledge regarding the efficacy of currently available therapeutics in disseminated monkeypox
- Appreciate the importance of additional research into the disease and potential treatments

## Abstract Reference Number: 20

Authors: Jessica Cushing-Murray BS

Co-authors: Erika Havaland, OMS-III, Alabama College of Osteopathic Medicine, North Alabama Medical Center, Florence, AL; Evans Kyei-Nimako, MD, Internal Medicine Hospitalist, North Alabama Medical Center, Florence, AL

**Submission Type:** Unusual Case Presentation (a unique, rarely seen clinical scenario with discussion of a patient)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Poster Abstract Presentation

## Abstract Title: Consequences of Both Common and Uncommon Complications of Uncontrolled Hypertension

### Abstract

**Introduction:** Though hypertension is one of the most prevalent and universal medical diagnoses, approximately 50% of patients do not achieve adequate BP control. Uncontrolled HTN has many known complications, such as heart failure, stroke, kidney disease, and myocardial infarction. However, there are far fewer incidences of GI complications, such as GI bleed, relating to uncontrolled HTN.

**Case Presentation:** We present a 63-year-old male poor historian with history of HTN and noncompliance with medication, presenting with episodes of confusion and recurrent falls. He had been to the ER the day prior to

admission with BP 195/145 after being found on the floor due to a fall, laying in his own urine and feces; however, he left AMA without a complete work-up. Family then brought him back to the hospital for similar disorientation and inability to care for himself. Family confirmed he takes no medications at home. His CBC revealed Hb 5.8 and Hct 16.9%. Brain MRI showed cerebral atrophy with prior chronic brainstem infarcts.

During his hospitalization, he required multiple investigations. First, on day 4 of hospitalization, patient became unresponsive/pulseless in PEA, and required 15 minutes of CPR before successful ROSC, intubation, and ICU transfer. Subsequent ECG revealed STEMI, so Cardiology performed heart catheterization with multiple unsuccessful PCI attempts and no reflow distally. Second, his original presentation with recurrent falls and the low H&H on admission suggested an upper GI bleed. EGD was performed, revealing multiple ulcers in the stomach and duodenum, one required clipping to prevent continued bleeding.

Diagnosis: Patient was diagnosed with hypertensive encephalopathy due to medication noncompliance, complicated by acute GI bleed secondary to gastric and duodenal ulcers. Management/Outcome: Patient received multiple PRBC transfusions, antibiotics, volume repletion, anticoagulants, and antihypertensives. His GI bleed without H. Pylori diagnosis or NSAID use suggested that his uncontrolled HTN caused gastroduodenal ischemia leading to bleeding peptic ulcers—a rare complication. Though this was able to be treated, his many years of noncompliance presented subsequent organ dysfunctions throughout his hospital stay that could not be reversed. Ultimately on day 17, patient expired due to STEMI after family agreed to make him DNI/DNR.

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2. [https://www.uptodate-com.acom.idm.oclc.org/contents/peptic-ulcer-disease-epidemiology-etiology-and-pathogenesis?search=ulcer%20causes&source=search\\_result&selectedTitle=3~150&usage\\_type=default&display\\_rank=3#H6](https://www.uptodate-com.acom.idm.oclc.org/contents/peptic-ulcer-disease-epidemiology-etiology-and-pathogenesis?search=ulcer%20causes&source=search_result&selectedTitle=3~150&usage_type=default&display_rank=3#H6)
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## Learning Objectives

1. Uncontrolled hypertension has many complications, both common and uncommon
2. Noncompliance with medication leads to these complications, which can manifest in multiple organ systems, including cardiac, neurologic, and gastrointestinal
3. There are few incidences relating GI bleeding and peptic ulcers to untreated hypertension

## Abstract Reference Number: 21

Authors: Ayobami Adeagb, MS

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**Submission Type:** Health System Science (Health care delivery, improving the quality of healthcare for patients and populations, and/or business of medicine)

**Submission Category:** Surgery & Surgical Specialties

**Presentation Type:** Oral Abstract Presentation (On-Site in Memphis ONLY - 10 minute presentation)

**Abstract Title: Counseling Patients About Opioid Rotator Cuff and Arthroscopic: A Systematic Review**

**Abstract**

Introduction: Last year, almost 70,000 Americans died from opioid overdoses. Each year opioid misuse and dependency cost the healthcare industry 35 billion dollars. Of course, the opioid epidemic's effects are far greater than the financial burden. The primary aim of this systematic review was to determine whether patient education prior to knee and rotator cuff related surgeries (specifically Acromioclavicular Ligament reconstruction, partial meniscectomy, rotator cuff repair), leads to reduced postoperative use of opioids. Methods: A systematic review was performed according to Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines. Electronic databases, such as PubMed, Embase, Cochrane Library, and Web of Science were searched for articles reported in English, that were published from 2000 to present. Studies were included if they were in reference to common knee arthroscopic procedures or common shoulder arthroscopic procedures. They also had to be conducted in the United States or a country that partakes in opioid usage for postoperative pain management. Results: The initial search identified 100 studies and reviews. 10 duplicates were removed, 33 articles were deemed irrelevant, 43 articles were excluded and 14 studies were included. Overall there were 1,841 patients, which included 590 males (32%) and 828 females (45%). Two of the 14 studies (14%) found that patient education decreases anxiety and fear. Another two studies (14%) also stated that patient education has been shown to reduce the length of hospital stay with early recovery and discharge. Three of 14 (21%) explained that education improves postoperative pain states, leading to lower opioid usage and costs. One study (7%) believed that the difference in postoperative analgesic efficacy may be explained by the preoperative education mode. Conclusion: Patients who were given a form of counseling or education regarding opioid usage were less likely to use opioids and this led to decreased opioid dependency after total arthroplasties. In other cases, patients who received preoperative counseling on opioid therapy were even able to taper off its usage before surgery even began. Counseling patients on opioid usage can decrease postoperative opioid dependence and Orthopaedic surgeons should understand that counseling patients will greatly decrease patient morbidity.

**References**

**Learning Objectives**

1. To understand the effects of patient opioid counseling on opioid dependence in the postoperative period.
2. Recognize what form of patient opioid counseling has the greatest effect on opioid dependence in the postoperative period.

**Abstract Reference Number: 22**

Authors: Jack Blitz, MS

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**Submission Type:** Clinical Science Presentation (A well-defined basic or clinical research project)

**Submission Category:** Surgery & Surgical Specialties

**Presentation Type:** Poster Abstract Presentation

**Abstract Title: Medial Collateral Ligament Reconstruction with Autograft vs Allograft**

**Abstract**

**Background/Knowledge Gap:** Medial collateral ligament (MCL) reconstruction is performed for high grade MCL injuries with valgus instability or after failed nonoperative treatment. The purpose of this study was to evaluate clinical outcomes following MCL reconstruction with autograft versus allograft.

**Methods/Design:** A systematic review was performed according to PRISMA guidelines. Databases including PubMed, CINAHL, EMBASE, and Cochrane Database were searched to identify studies comparing outcomes of MCL reconstruction with autograft versus allograft. Studies were excluded if they included a concomitant knee ligament injury other than the anterior collateral ligament. A quality assessment was performed using the modified Coleman Methodology Score. **Results/Findings:** The initial search identified 524 studies, 22 of which met inclusion criteria. Overall, there were 332 patients (60% male, 40% female), 159 (47.4%) underwent MCL reconstruction with autograft and 173 (52.5%) with allograft. 31.2% of patients who underwent MCL reconstruction with allograft had concomitant anterior cruciate ligament (ACL) reconstruction, as compared to 0 patients who underwent MCL reconstruction with autograft. Pain (measured by Lysholm scores) improved on average from 54.4 to 89.6, and post-operative functionality (measured by International Knee Documentation Committee (IKDC) scores) improved on average from 53.1 to 88.3 in patients with MCL reconstruction. There was no significant difference in post-operative Lysholm and IKDC scores between MCL reconstruction with autograft or allograft. Radiographic analysis demonstrated that 16 (10.1%) patients who underwent MCL reconstructions using autograft had post-operative valgus instability, and 5 (2.8%) patients who underwent MCL reconstructions using allograft had the same outcome. 82 patients underwent MCL reconstruction and primary or revision ACL reconstruction, and 36 (43.9%) of these patients presented with knee extension deficits and failure of valgus stress tests. **Conclusion/Implications:** MCL reconstruction with either autograft or allograft leads to similar clinical outcomes such as Lysholm and Tegner scores. Valgus stress on radiograph improved more significantly in patients who underwent MCL reconstruction with allograft compared to autograft. MCL reconstruction combined with primary or revision ACL reconstruction results in a higher rate of valgus stress and flexion deficits.

## References

### Learning Objectives

1. The reader should understand the similarities and differences of the outcomes of MCL reconstruction with autograft and allograft. 2. The reader should understand the variability and confounding factors that complicate the analysis of graft choice.

## Abstract Reference Number: 23

**Authors:** Madeline Holbrook, BS,BA

**Co-authors:** M. Nekele Holbrook, BS, BA, MS3, University of Texas Health San Antonio, San Antonio, TX; Alexis Lorio, BS, MS3, University of Texas Health San Antonio, San Antonio, TX.

**Submission Type:** Health System Science (Health care delivery, improving the quality of healthcare for patients and populations, and/or business of medicine)

**Submission Category:** Public Health & Environmental Medicine

**Presentation Type:** Poster Abstract Presentation

## Abstract Title: United States Healthcare Burden and Patient Distribution of Inpatient Skin and Subcutaneous Tissue Infections During 2016-2020

### Abstract

**Background:** Skin and subcutaneous tissue infection (SSTI) is a largely preventable disease that affects patients of all income levels, leading to substantial costs for hospitals and patients.

**Methods:** A quantitative analysis of inpatient data from 2016-2020 was performed using the Healthcare Cost and Utilization Project (HCUP). Patients hospitalized for SSTIs were evaluated for demographics, length of stay (LOS),



hospital charges, and hospital costs. Patients were then organized by community-level income (low, middle, high) and re-analyzed. Statistical Z-testing was utilized for the analysis.

Results: A total of 2,542,399 discharges were recorded between the years 2016-2020 with SSTI as the primary diagnosis, with 45.3% female and mean age of 53.2 ( $\pm 0.2$ ) years old. The mean rate of SSTI discharges per 100,000 persons was 155.6 ( $\pm 1.6$ ), which decreased from 178.4 to 116.3 during the study period ( $p=0.00$ ). The mean LOS was 4.08 days ( $\pm 0.02$ ). During the study period, the accumulated national bill was \$81 billion. The mean hospital charges per patient were \$32,056 ( $\pm 329$ ), increased during the study course from \$28,897 to \$36,754 ( $p=0.00$ ) while mean hospital costs per patient were \$7,910 ( $\pm 55$ ), increased from \$7,321 to \$9,123 ( $p=0.00$ ). Patient community-level income data were available for 2,472,030 discharges. When categorized, mean SSTI discharges per 100,000 population for low, middle, and high income communities were 199.4 ( $\pm 3.7$ ), 149.5 ( $\pm 2.0$ ), and 107.0 ( $\pm 3.1$ ). LOS were 4.18 ( $\pm 0.03$ ), 4.06 ( $\pm 0.02$ ), and 3.98 ( $\pm 0.04$ ). Mean hospital charges were \$31,325 ( $\pm 424$ ), \$31,329 ( $\pm 357$ ), and \$34,180 ( $\pm 716$ ) while mean costs were \$7,550 ( $\pm 68$ ), \$7,848 ( $\pm 61$ ), and \$8,508 ( $\pm 132$ ). P-values comparing low and high community-level income findings were significant ( $p<0.001$ ).

Conclusion: These data show that throughout the study period, the number of total discharges decreased, and low income groups had the largest ratio of community members affected. Average hospital charges, costs, and the difference between the two values increased; the same remained true when separated by community-level incomes. Among the income groups, patients from high income communities recorded the highest values in average hospital charges, costs, and the difference between the two values.

#### References

<https://hcupnet.ahrq.gov/#setup>

#### Learning Objectives

Establish the costs of SSTI on the national healthcare system and evaluate how these costs are distributed among income groups.

### Abstract Reference Number: 24

Author: Skylar Palmer, BS

Co-author: Miriam Henry, MD, Department of Surgery Division of Plastic and Reconstructive Surgery, PGY5, University of Kentucky, Lexington, Kentucky

Lesley Wong, MD, Department of Surgery Division of Plastic and Reconstruction Surgery, University of Kentucky, Lexington, Kentucky

**Submission Type:** Health System Science (Health care delivery, improving the quality of healthcare for patients and populations, and/or business of medicine)

**Submission Category:** Click to Select

**Presentation Type:** Poster Abstract Presentation

#### Abstract Title: Smartphone Operating System Preferences and Bias in Medical Trainees

##### Abstract

Background Implicit bias and personal preference may affect communication between IOS and Android users when interacting in a healthcare setting as well as outside of the hospital socially. By identifying bias and other factors influencing resident communication, ACGME programs may act to reduce barriers to fostering strong resident relationships. This study seeks to assess smart phone communication preferences, potential biases, and other related social behavior in residents and fellows.

Methods An anonymous survey using REDCap survey tool was sent to all residents and fellows at our institution in all ACGME accredited training programs, this list totaled 922 residents and fellows. Results The response rate was 20.5% with trainees from over 20 different specialties. Of the 189 respondents, 87% use an iPhone and 13% use an

Android. 60% agreed or strongly agreed to feeling closer to colleagues when communicating socially via smart phone. Of the iPhone users 90% reported they notice when someone does not have an iPhone when messaging. 40% of iPhone users reported a moderately strong to strong preference towards communicating with other iPhone users compared to non-iPhone users. Additionally, 24% of iPhone users reported they were likely to extremely likely to exclude someone from a group message if they do not use an iPhone. Finally, 13% of iPhone users said they were likely to extremely likely to generalize personal characteristics of others based on the smart phone they use. Conclusions

Strong communication is important amongst residents and fellows to successfully work as a team and build relationships. As communication via smart phone is so common among medical trainees, it is necessary to examine how personal smart phone preferences may impact communication. Survey results found most residents use an iPhone and many iPhone users prefer to communicate with other iPhone users. As majority of residents reported feeling closer to those they work with when communicating socially via smart phone, this could offer a perhaps unexpected opportunity to strengthen relationships among co-residents.

### References

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Diel, Buck, C., & Eymann, T. (2018). Your smartphone, my smartphone - how smartphone ownership determines social group affiliation

### Learning Objectives

1.) After the presentation the learner will be able to identify bias reported regarding smartphone operating systems in medical trainees.

## Abstract Reference Number: 26

Authors: Alexander Phan, MD, MS

Co-authors: Ankur Bhagat, DO, Internal Medicine, PGY-3, Arrowhead Regional Medical Center, Colton, CA; Bahareh Maknoui, MD, Pulmonary/Critical Care, PGY-4, Arrowhead Regional Medical Center, Colton, CA; Momin Masroor, BS, Medical Student, California University of Science and Medicine, Colton, CA; Mufadda Hasan, MD, Attending Physician, Pulmonary/Critical Care, Arrowhead Regional Medical Center, Colton, CA.

**Submission Type:** Unusual Case Presentation (a unique, rarely seen clinical scenario with discussion of a patient)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Poster Abstract Presentation

### Abstract Title: Disseminated Histoplasmosis in a Patient with Acquired Immunodeficiency Syndrome in a Non-Endemic Region (California)

#### Abstract

Progressive disseminated histoplasmosis is seldom diagnosed in non-endemic regions of the world owing to the fungus's geographical distribution. In the United States (US), *Histoplasma capsulatum* is classically known to be endemic to the Mississippi and Ohio River valleys, and cases in non-endemic areas, such as the southwest US, are exceedingly rare. Patients with acquired immunodeficiency syndrome (AIDS) are at risk for infection with *H. capsulatum*, and failure to recognize and treat histoplasmosis may be devastating to patients. In non-endemic regions, the proposed mechanism for disseminated histoplasmosis in AIDS patients is reactivation of a previous infection. Consequently, travel history is extremely important when evaluating a patient with suspected histoplasmosis. The IDSA recommends treatment with liposomal amphotericin B with transition to itraconazole.

Here, we present the case of a young male patient who presented to a southern California hospital with diarrhea, was diagnosed with AIDS, and developed acute hypoxic respiratory failure. Chest imaging revealed diffuse reticulonodular opacities, and histoplasmosis was confirmed by urine and serologic examination. He was subsequently treated with liposomal amphotericin B and safely discharged from the hospital with oral itraconazole therapy.

Progressive disseminated histoplasmosis is a rare diagnosis in non-endemic regions of the United States such as California. AIDS patients with histoplasmosis present with a myriad of non-specific infectious symptoms and failure to consider histoplasmosis in the differential diagnosis may lead to delays in care for this vulnerable population. Consequently, it is important for clinicians to recognize manifestations of non-endemic mycoses and obtain a full infectious work-up in immunocompromised patients, as histoplasmosis is a treatable condition.

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### Learning Objectives

1. Remind physicians in areas outside of the Ohio River Valley to consider histoplasmosis as a differential diagnosis.
2. Discuss the importance of a broad infectious work-up for patients with a history of HIV presenting with vague symptoms.
3. Raise awareness of infectious diseases, given ease of travel. Additionally, remind physicians to take thorough and detailed travel history.

### Abstract Reference Number: 27

Authors: Melanie Peterson, BS

Co-authors: Ramsey Kinney MD PhD, Orthopedic Surgery, Orlando VA Medical Center, Orlando, FL

**Submission Type:** Case Presentation (A clinical scenario with discussion of a patient)

**Submission Category:** Surgery & Surgical Specialties

**Presentation Type:** Poster Abstract Presentation

### Abstract Title: Combined Rotator Cuff Repair and Superior Capsule Reconstruction for Chronic Non-Healing Rotator Cuff Repair

#### Abstract

Rotator cuff tears are one of the most common orthopedic injuries, warranting over 300,000 rotator cuff repair procedures per year in the US. An unfortunate consequence of surgical intervention is subsequent failure of hardware, re-tear, and non-healing of the injured tendon. Thereby, adjunctive procedures must be considered during secondary rotator cuff repair. Superior capsular reconstruction has been demonstrated to be an adequate adjunct to repeat rotator cuff repair, improving post-operative outcomes in optimal candidates. These considerations are discussed in the following report of a 59-year-old male with history of 2x failed, non-healing rotator cuff repair who underwent a tertiary rotator cuff repair with superior capsular reconstruction using dermal allograft. Presence of scarring, retained hardware, in addition to a significant retraction defect of supraspinatus complicated the procedure. A double row hourglass fibertape fixation with dermal allograft was performed. Outcomes, considerations, and current literature on complex rotator cuff repair for chronic non-healing patients are discussed.

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## Learning Objectives

Discuss, treat, implement a new strategy

## Abstract Reference Number: 28

Authors: Emma Lewis, BS

Co-authors: Bethany Halloran, MD, OBGYN, PGY4, Tulane University School of Medicine, New Orleans, LA; Sandra Diaz, MD, OBGYN Physician, Institute for Women's Health and Body, Jupiter, FL; Alexandra Kruse, MD, OBGYN, PGY4, Tulane University School of Medicine, New Orleans, LA; Emma G. Lewis, MS, Medical Student, MS3, Tulane University School of Medicine, New Orleans, LA; Stacey Tran, MD, OBGYN, PGY2, Tulane University School of Medicine, New Orleans, LA; Chi Dola, MD, OBGYN, Program Director, Tulane University School of Medicine, New Orleans, LA.

**Submission Type:** Clinical Science Presentation (A well-defined basic or clinical research project)

**Submission Category:** Women's & Children's Health

**Presentation Type:** Oral Abstract Presentation (On-Site in Memphis ONLY - 10 minute presentation)

**Abstract Title:** Exploring Disparity in Obstetric Outcomes in New Orleans, LA

### **Abstract**

**Background:** To compare the maternal and neonatal outcomes of recent undocumented Hispanic immigrants with American parturients.

**Methods:** This was a retrospective review of electronic maternal and neonatal charts, with identification of undocumented immigrant status by absence of valid social security number. The American parturients (self-identified as Caucasians or African American) who served as controls were chosen following each Hispanic study patient (non-Hispanic white or black women). Descriptive and comparison analyses were performed with  $p < 0.05$  considered significant.

**Results:** Over the study period, 480 paired maternal and neonatal charts were reviewed; 254 in the control group of undocumented Hispanic women and 226 in the study group. When comparing the control to the study group, there is no significant difference in the mean maternal age at delivery (27.9 + 5.4 vs. 28.2 + 6.1 years, respectively;  $p=ns$ ) or mean gestational age at delivery (38.7 + 2.5 vs 38.8 + 3.1 weeks, respectively;  $p=ns$ ). The control group had a significantly lower admission hemoglobin (11.2 + 1.5 vs 11.9 + 1.2) and hematocrit (34.4 + 3.8 vs 36.2 + 3.1),  $p < 0.05$ , higher rate of self-reported tobacco use (5.9% vs 1%,  $p < 0.05$ ), alcohol use (1.5% vs 0.2%,  $p < 0.05$ ), and illicit drug use (4 (4.4% vs 0.8%,  $p < 0.05$ ), higher prevalence of Hepatitis C (2.4% vs 0%,  $p < 0.05$ ), gestational hypertension (8.7% vs 0.9%,  $p < 0.05$ ), pre-eclampsia with severe features (7.1% vs 1.8%,  $p < 0.05$ ), fetal growth restriction (5.9% vs. 1.8%,  $p < 0.05$ ), cervical insufficiency (1.3% vs 0%,  $p < 0.05$ ), primary cesarean delivery (17.9% vs 10.3%,  $p < 0.05$ ) and their neonates had lower mean birth weight (3,152.5g + 572.1 vs 3,296.6g + 457.1,  $p < 0.05$ ) and their length of hospital stay was longer (3.7 + 7.5 vs 2.63 + 2.7 days,  $p < 0.05$ ). There is no difference between the two groups with regard to: gestational diabetes, placenta abruption, 3rd or 4th degree lacerations, chorioamnionitis, or endometritis. **Conclusions:** Our study findings favor the paradoxical theory that, despite presumed lower socioeconomic status associated with recent immigrant status and later initiation of prenatal care, our study population of Hispanic immigrants appeared generally healthier, evidenced by their overall better baseline hemoglobin and hematocrit levels, and made healthier life choices with reported lower rates of alcohol, tobacco, and drug use and had better maternal outcomes and neonatal outcomes.

### **References**

#### **Learning Objectives**

Understand that Hispanic immigrants in New Orleans have better overall maternal and neonatal health outcomes compared with American parturients.

### **Abstract Reference Number: 29**

**Authors:** Aditya Vinjamuri, MS

**Co-authors:** David Engelhardt, Layola University of New Orleans;

Sarah Abdullah, PhD, Department of Surgery, Tulane University School of Medicine;

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Zander Gerberg, Tulane University;

Sharven Taghavi, MD, MPH, MS, Department of Surgery, Tulane University School of Medicine;

Juan Duchesne, MD, Department of Surgery, Tulane University School of Medicine;

Olan Jackson-Weaver, PhD, Department of Surgery, Tulane University School of Medicine

**Submission Type:** Clinical Science Presentation (A well-defined basic or clinical research project)

**Submission Category:** Surgery & Surgical Specialties

**Presentation Type:** Poster Abstract Presentation

## **Abstract Title: The Effects of Vigabatrin in Hemorrhagic Shock Induced Endotheliopathy and Subsequent Glycocalyx Shedding in the Lung Could Provide an Explanation for the Differential Outcomes in Trauma Between Men and Women**

### **Abstract**

#### **Background:**

Trauma is the leading cause of death in people under 44 years old. Hemorrhagic shock (HS) is often a consequence of trauma and contributes to morbidity and mortality in these patients. Shock-induced endotheliopathy has garnered interest recently and an aspect of this – endothelial glycocalyx shedding (EGX)- may promote coagulopathy following hemorrhage. Vigabatrin is an FDA approved anticonvulsant that inhibits GABA transaminase, preventing the metabolism of GABA to succinic-semialdehyde and subsequently to succinate. Succinate accumulates in tissues during hemorrhagic shock due to electron transport chain uncoupling and is a direct and independent predictor of death likely due to its promotion of reactive oxygen species (ROS). We hypothesize that administration of Vigabatrin prevents the buildup of succinate and promotes better physiological recovery following HS. **Methods:** A rat model of hemorrhagic shock and resuscitation was used to assess glycocalyx disruption in the lungs via fluorescent-labeled wheat germ agglutinin staining in frozen tissue and by syndecan-1 ELISA on plasma samples. A control group (n=5) with no Vigabatrin treatment following hemorrhage and resuscitation (H/R) was compared against an experimental group (n=5) that received Vigabatrin following hemorrhage and before resuscitation. **Results:**

Glycocalyx shedding (assessed by an increase in plasma syndecan-1 levels) was not improved in the vigabatrin treated group. Tissue staining of lung vasculature showed enhanced glycocalyx shedding in the vigabatrin group compared to H/R. **Conclusions:** Vigabatrin exacerbated glycocalyx shedding during hemorrhage/resuscitation, refuting our hypothesis. This suggests that GABA transaminase may in fact reduce succinate buildup during hemorrhage. Future experiments will be conducted to determine the effects of vigabatrin inhibiting GABA transaminase in female rats. Females have higher expression of the enzymes succinic semialdehyde dehydrogenase and GABA transaminase. Inhibiting these enzymes and analyzing glycocalyx shedding in the lungs and serum may provide insight into why females are protected during trauma and subsequent hemorrhagic shock.

### **References**

<https://pubmed.ncbi.nlm.nih.gov/34259440/>

### **Learning Objectives**

1. To provide the audience a background on the Endotheliopathy of Trauma (EOT). 2. To provide the audience with evidence on managing and combating endothelial glycocalyx shedding through the usage of pharmacological compounds.

### **Abstract Reference Number: 30**

**Authors:** Marinna Smith, BS

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**Submission Type:** Work in Progress (Any type of project or idea that is in process which does not have established results. Student/resident applicant(s) must be actively involved in the development of the idea, and/or the planning and execution of the project)

**Submission Category:** Bioethics & Medical Education

**Presentation Type:** Poster Abstract Presentation

## **Abstract Title: Harm Reduction Curricula Integration into Medical Education: A Student-led Effort to Increase Knowledge of Substance Use Disorders and Decrease Stigma**

### **Abstract**

Introduction: Substance use disorder, or SUD, is a leading health issue in society. It is linked to other health conditions such as liver cirrhosis, cognitive impairment, and cardiac valve disease. The concept of harm reduction revolves around strategies that help to reduce the negative impacts of substance use, and it is an integral part of SUD treatment. Harm reduction approaches currently used to address SUD include syringe service programs, which decrease transmission of diseases such as HIV and Hepatitis C, and the distribution of Narcan/naloxone, which can reverse the effects of an opioid overdose. There is limited literature on harm reduction education in medical education, despite the evidence-based benefits associated with its use.

Goals and Objectives: Students at the University of South Carolina School of Medicine Greenville identified the need to educate medical students early in their career about the utility of harm reduction, especially within the context of SUD. They sought to integrate this material into the M1 curriculum to complement their basic science education.

Methods: Students created a curriculum proposal that was presented to leadership at the School of Medicine Greenville. The proposal focused on the integration of harm reduction education, general knowledge regarding SUD, and methods of disease prevention into the M1 clinical skills curriculum. M1 students will learn the importance of motivational interviewing along with learning how to lead a patient-centered conversation. The curriculum involves standardized patient encounters, where M1 students interact with patients who have SUD. This allows them to implement the motivational interviewing techniques they have learned with a focus on providing harm reduction services (such as access to Narcan/naloxone, syringe services, etc.) to this patient population. Next Steps: Students will create pre and post surveys to better understand the efficacy of the curriculum in regards to M1 students beliefs and knowledge about SUD and harm reduction. They also hope to increase the frequency of SUD and harm reduction education within their medical school by starting conversations about these topics early in students' education. Lessons learned from this activity could be generalizable and replicated by other medical education institutions.

### **References**

SAMHSA is a good resource for more information on substance use and harm reduction:  
<https://www.samhsa.gov/find-help/harm-reduction>

### **Learning Objectives**

1. Upon completion of this lectures, learners should be better prepared to identify the importance of harm reduction and recognize its role in the treatment of substance use disorder. 2. Upon completion of this lectures, learners should be better prepared to emphasize the benefit of teaching about substance use disorder early in a medical student's career, including education on how to utilize harm reduction strategies with patients. 3. Upon completion of this lectures, learners should be better prepared to explain how education regarding substance use disorder can facilitate discussions surrounding bias, stigma, and conscious professionalism within the medical field.

### **Abstract Reference Number: 31**

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**Submission Type:** Clinical Science Presentation (A well-defined basic or clinical research project)

**Submission Category:** Surgery & Surgical Specialties

**Presentation Type:** Poster Abstract Presentation

**Abstract Title: Success of Primary Uncemented Total Hip Replacement in the Elderly**

**Abstract**

Primary total hip arthroplasty (THA) is one of the most commonly performed procedures in the US. With recent advancement in technology in conjunction with an aging population, addressing methods to optimize THA in the geriatric population has become essential. Historically, cemented THA has been a successful approach in this unique population, as the cement component is able to reinforce long bones with poor bone stock seen in osteoporosis and osteomalacia. However, cementing does increase the risk of bone cement implantation syndrome (BMIS) induced cardiovascular collapse as well as create a difficult surgical course if revision THA is indicated, such as in hip fracture from a fall. Therefore, cementless options that reduce these complications are being reconsidered. The purpose of this study is to examine existing literature for evidence of efficacy and outcomes of primary cemented THA in the elderly.

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**Learning Objectives**

Discuss, examine, compare and contrast

**Abstract Reference Number: 32**

Authors: Aditya Vinjamuri, MS

Co-authors: Jarrett Godfried, MS, Tulane School of Medicine;

Andrew Jordan, MS, Tulane School of Medicine;

Victoria K. Ierulli, MS, Tulane School of Medicine;

Mary K. Mulcahey, MD, Tulane School of Medicine;

**Submission Type:** Work in Progress (Any type of project or idea that is in process which does not have established results. Student/resident applicant(s) must be actively involved in the development of the idea, and/or the planning and execution of the project)

**Submission Category:** Surgery & Surgical Specialties

**Presentation Type:** Poster Abstract Presentation

**Abstract Title: Prevention, Causes and Management of Running Related Ankle Injuries: A Systematic Review**

**Abstract**

Introduction: Running is a widely accessible and popular means of exercise that confers many health benefits. There has been an increase of acute running related injuries (RRI) because most runners increased the volume and intensity of their running workouts during the pandemic. The purpose of this systematic review was to determine the causative factors for three distinct running related injuries to the ankle- Achilles tendinopathy, peroneal



tendonitis, and ankle sprains and their implications in pediatric, adult, and elderly populations. Additionally, we sought to propose recommendations on how to prevent, treat, and rehabilitate these injuries to optimize return to play and running. Methods: A systematic literature review was performed using PubMed, CINAHL and EMBASE in accordance with Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Studies that evaluated running related ankle injuries were selected and were included if they were randomized control trials (RCT's), which discussed prevention or management of Achilles tendinopathy, peroneal tendinitis, or ankle sprains in a pediatric, adult or elderly population.

Results: A total of 189 studies were identified and 12 met inclusion criteria. Six of the 12 (50%) studies found foot core strengthening exercises to not only prevent ankle instability issues, but also assist in the rehabilitation process following injury. Four of the 12 (33%) studies discussed the causes of Achilles tendinopathy and different methods to manage the injury either by changes in training volume, intensity, shoe type or range of motion of the ankle joint. Two of 12 (17%) studies discussed rehabilitation of the ankle-foot complex following lateral and medial ankle sprains. All twelve (100%) of the studies researched an adult population, with 1 study (8%) discussing ankle instability implications in the elderly and 2 studies (17%) discussing running related ankle injury in a pediatric population. Conclusion: Conservative management using devices such as rocker shoes and orthoses can help alleviate symptoms associated with Achilles and peroneal tendonitis. However, progressively training and strengthening the ankle-foot complex using the reviewed methods will result in a joint that will be less prone to injury and more compliant with training demands.

## References

### Learning Objectives

1. To provide evidence on how progressively training and strengthening the ankle-foot complex will result in a joint that will be less prone to injury and more compliant with training demands.
2. To provide clinicians with specific rehabilitation protocols that can expedite and facilitate an athlete back into the sport.

## Abstract Reference Number: 33

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**Submission Type:** Health System Science (Health care delivery, improving the quality of healthcare for patients and populations, and/or business of medicine)

**Submission Category:** Surgery & Surgical Specialties

**Presentation Type:** Oral Abstract Presentation (On-Site in Memphis ONLY - 10 minute presentation)

### Abstract Title: Complications following Hook Plate Fixation of the Acromioclavicular Joint: A Systematic Review

#### Abstract

Introduction: Acromioclavicular (AC) joint injuries commonly occur due to direct physical trauma to the lateral aspect of the shoulder. Several surgical techniques can be used to reconstruct the AC joint including hook plate, allograft, suture-button construct, Kirschner-wires, and the Bosworth screw. Numerous studies have reported complications following various techniques for AC joint reconstruction which differ due to the different types of equipment used. The purpose of this study was to perform a systematic review of the literature to determine common complications following hook plate fixation of AC joint. Methods: A systematic review was performed according to Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. PubMed,

Embase, Cochrane Library and Web of Science were searched for studies that were peer-reviewed publications in English, from 2000 to present that discussed methods of AC joint reconstruction. Studies conducted in the United States or countries that offer the same surgical intervention options were included. Studies were excluded if they were not a peer-reviewed study.

Results: 395 articles were initially identified, and 33 articles (2,455 patients) were selected for quality assessment and data extraction. The most common complications following hook plate fixation of the AC joint were subacromial osteolysis (14 studies), loss of fixation (12 studies), and infection (15 studies). Most of these complications improved after the plate was removed. In a study of 16 patients, they all (100%) experienced some type of discomfort with 6 patients (38%) experiencing impaired abduction. These symptoms were relieved after removal of the hook plate. Conclusion: Hook plate fixation of the AC joint provides good functional and radiographic outcomes for patients. Even so, subacromial osteolysis, subacromial impingement, implant irritation, and infection are complications that can arise at higher rates than other reconstructive techniques for AC repair. Hook plate fixation augmented with reinforcement such as coracoclavicular ligament tape or loop suspensory reconstruction may help lower rates of subacromial osteolysis as well as improve short-term functional outcome measures postoperatively. Orthopaedic surgeons can utilize this data to select best treatments for AC joint repair, but further research is needed to determine which is superior.

## References

### Learning Objectives

1. To assess if hook plate fixation is an ideal technique for surgical repair of acromioclavicular joint dislocation.
2. To examine the complications that can be expected with surgical intervention for acromioclavicular joint dislocation.

## Abstract Reference Number: 34

Authors: Aditya Vinjamuri, MS

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Mary K. Mulcahey, MD, mary.mulcahey.md@gmail.com, Tulane School of Medicine

**Submission Type:** Work in Progress (Any type of project or idea that is in process which does not have established results. Student/resident applicant(s) must be actively involved in the development of the idea, and/or the planning and execution of the project)

**Submission Category:** Surgery & Surgical Specialties

**Presentation Type:** Poster Abstract Presentation

## Abstract Title: Multimodal Pain Management Strategies Following ACL Reconstruction: A Systematic Review

### Abstract

Introduction: Pain control after Anterior Cruciate Ligament Reconstruction (ACLR) is critical, as it influences postoperative recovery and the time to return to play. The purpose of this study was to evaluate multimodal pain management strategies following ACL reconstruction and to determine the impact on outcomes. Methods: A systematic review of the literature was performed using PubMed, CINAHL and EMBASE in accordance with PRISMA (Preferred Reporting Items for Systematic Reviews and Meta Analysis) guidelines. Studies that evaluated post-operative analgesia following ACLR were identified and were included if they were randomized control trials (RCTs) with one or more analgesic regimen being compared for efficacy. The following data were extracted: patient demographics, study design, analgesia regimens being compared, VAS scores, and study outcomes. Results: A total of 40 RCTs met inclusion criteria: 18 on regional nerve blocks (47%), 14 on intra-articular injections (34%), 3 on oral

medications (7%), 3 on blood flow/ cryotherapy (7%), and 2 on IV infusions (5%). Adductor canal blocks (ACBs) provided an effective, but slightly less potent analgesia compared to femoral nerve blocks (FNB), which provided sufficient coverage for ACL reconstruction. ACBs in conjunction with popliteal plexus blocks can be advantageous in that there are no associated motor deficits compared to FNB. Additionally, pregabalin can be administered with an ACB to potentiate analgesia and reduce rescue opioid consumption in patients.

Conclusion: Preemptive administration of medications such as pregabalin or celecoxib along with intra-articular injections of morphine and bupivacaine in combination with adductor canal nerve blocks seem to be the most effective method for controlling pain following ACLR surgery. Orthopaedic surgeons should use multimodal analgesic strategies as the preferred method of inducing adequate analgesia following ACLR as differing mechanisms of actions of drugs provide a synergistic and more profound analgesia than one drug alone.

## References

### Learning Objectives

1. To provide the best analgesic practices for clinicians to utilize to effectively manage patient's pain after an ACL reconstructive procedure. 2. To understand the strengths and weaknesses of each analgesic regiment and recognize the variety of options available to tailor analgesia to the needs of each patient.

### Abstract Reference Number: 35

Authors: Nicolette Schurhoff, BS

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**Submission Type:** Clinical Science Presentation (A well-defined basic or clinical research project)

**Submission Category:** Quality Health Care, Patient Safety & Best Practices

**Presentation Type:** Poster Abstract Presentation

### Abstract Title: Orthopaedic Hand Patients Who Screen Positive for Intimate Partner Violence (IPV) Self-Report Lower Health Outcome Scores and Higher Disability Scores

#### Abstract

**BACKGROUND:** Musculoskeletal injuries are the second most common manifestation of Intimate Partner Violence (IPV), with a staggering 12-month prevalence rate of 15-32% in female participants who present to an orthopaedic fracture clinic. IPV has also been shown to negatively affect recovery from orthopaedic injury. This study compared patient-reported outcomes (PROs) and self-reported disability scores among patients who prospectively screened positive for IPV versus those that did not in orthopaedic hand clinic.

**METHODS:** A prospective observational cohort study involving patients presenting to orthopaedic hand clinic at an urban Level 1 trauma hospital in Miami, Florida was performed. Eligible participants completed two validated IPV screening tools (Direct IPV and E-HITS), three clinical PROs scales (EQ-5D-3L, Visual Analog Scale (VAS) State of Health, and Return to Function (RTF) Score), and a study specific clinical survey. A multivariate ordinal regression analysis was performed, and chi-squared test compared categorical variables with significance of  $p < 0.05$ . **RESULTS:** Over 3 months, 120 patients (49% men) with a mean age of 45.5 ( $\pm 16.9$ ) were enrolled. 27 patients (22.5%) screened positive for IPV (Group 1), and 93 screened negative (Group 2). 12 patients (10%) disclosed undocumented citizenship status, while another 9 patients (7.5%) disclosed non-resident status. 44 patients (37%) were uninsured. Types of IPV experienced by gender in the prior year and patient's lifetime are reported in Table 1.

Positive IPV disclosure was strongly associated with VAS scores less than 25 (coef=2.11, p=0.044) and EQ-5D-3L summary scores greater than 10 (coef=3.90; p=0.005). Among patients who screened positive for IPV, female gender was significantly associated with low RTF Summary Scores (RTF = 1) when controlling for race, sexual orientation, and relationship status (coef = 1.23, p=0.001).

**CONCLUSION:** Orthopaedic hand and upper extremity patients who screened positive for IPV consistently report lower health outcomes and higher disability scores. These findings highlight a lower health-related quality of life in orthopaedic patients disclosing IPV, which may result in delayed recovery from injury. Orthopaedic surgeons are presented with a unique opportunity to aid a particularly vulnerable patient population and modify a factor that may be limiting return to pre-injury function and optimal health outcomes.

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## Learning Objectives

1. Describe the impact of IPV on orthopaedic injury recovery and patient-reported outcomes.
2. Identify the prevalence of IPV and the demographics associated.
3. Discuss the role of orthopaedic surgeons in aiding vulnerable populations.

## Abstract Reference Number: 36

Authors: Emma Lewis, MS

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**Submission Type:** Clinical Science Presentation (A well-defined basic or clinical research project)

**Submission Category:** Women's & Children's Health

**Presentation Type:** Poster Abstract Presentation

**Abstract Title:** Skin Incision to Delivery of baby-Is Time of the Essence?

## Abstract

Background: To determine the effects of the time interval from skin incision to delivery of infant on maternal and fetal outcomes.

Methods: A retrospective analysis was performed of all singleton cesarean births from June 2017 through May of 2018. Maternal and neonatal characteristics and outcomes were collected including: age, gravidity, parity, type of cesarean, gestational age, delivery indications, medical co-morbidities and operative times. Cesarean sections were separated by operative times into two categories, skin to delivery <10 minutes (SD <10) and skin to delivery >10 minutes (SD >10). Maternal and neonatal characteristics and outcomes were compared, utilizing Chi-square and Student's t-test with  $p < 0.05$  being considered significant. Results: Data from 265 mother and neonate pairs were collected; 134 deliveries occurred at <10 minutes after skin incision (SD <10 min) and 131 occurred at >10 minutes from skin incision (SD >10). Mean maternal age and mean EGA at delivery were similar between the two groups, (29.02 years +5.7 vs 29.24 years +5.5 and 38.45 weeks +2.2 vs 38.51 weeks +1.6, respectively,  $p=ns$ ). Maternal obstetrical characteristics, medical conditions and indications for delivery were similar between the two groups, except for indication for delivery being placenta abruption (3% vs 0%,  $p < 0.05$ ). Significantly shorter time interval to delivery was detected in primary cesarean delivery when compared to repeat cesarean delivery (62.6% vs. 47.2%,  $p < 0.01$ ). Those with longer time interval to delivery sustained higher estimated blood loss >1000 ml (13.3% vs 2.2%,  $p < 0.05$ ), need for transfusion (6.1% vs 1.5%,  $p < 0.05$ ) and length of maternal hospitalization (3.1 days +0.7 vs 2.9 days +0.7 days,  $p < 0.05$ ). There were no statistically significant differences in neonatal characteristics and outcomes between SD <10 min and SD >10, including: mean neonatal birth weights (3180.7 grams + 647.5 and 3162.9 grams + 611,  $p=ns$ ), Apgar scores at 1 and 5 minutes (7.8 + 1.8 vs 7.8 + 1.5 and 8.8 + 0.8 and 8.7 + 7.0, respectively,  $p=ns$ ), meconium passage (11.2% vs 8.4%,  $p=ns$ ), Apgar scores <3 at 1 minute and <7 at 5 minutes (5.2% vs 3.2% and 6.6% vs 6.2%, respectively,  $p=ns$ ), admission to NICU (14.2% vs 18.3%,  $p=ns$ ), grunting or retractions at delivery (5.2% vs 8.4%,  $p=ns$ ), need for additional respiratory therapy (21.6% vs 31.3%,  $p=ns$ ) or neonate lacerations (1.5% vs 0,  $p=ns$ ). Factors that were found to be associated with low APGAR scores <7 at 5 minutes were: lower birth weight (2,855.7 grams + 968.1 vs. 3,192.4 grams + 597.3), prolonged uterine incision to delivery time (2.6 +3.0 vs 1.7 +1.6 minutes) emergent cesarean section vs non-emergent type cesarean section (18.8% vs 5.1%,  $p < 0.05$ ), midline skin incision vs Pfannenstiel (22.2% vs. 5.3%,  $p < 0.05$ ). Factors found to effect prolonged surgical interval from skin to delivery were: non-emergent vs urgent vs emergent cesarean section (11.4 + 6.2 vs 9.6 + 5.2 vs 4.0 + 5.1 minutes,  $p < 0.05$ ), Pfannenstiel vs midline skin incision type (10.1 + 5.5 vs 7.1 + 3.7 minutes,  $p < 0.05$ ) and repeat vs primary cesarean (11.4 + 6.1 vs 8.6 + 5.1 minutes,  $p < 0.05$ ). Conclusion: Prolonged time from uterine incision to delivery of infants appears to be associated with an increased risk for a low Apgar score of less than 7 at 5 minutes. Prolonged time from skin incision to delivery of baby was also found to be associated with increased maternal blood loss, need for blood transfusion and length of hospitalization, however prolonged skin to delivery interval was not associated with neonatal morbidity.

## References

### Learning Objectives

To understand the connection between uterine incision time and Apgar scores

### Abstract Reference Number: 37

Authors: Samantha Sun, BS

Co-Authors: Maddie Morris, BS, Medical Student, 2nd Year, UCF College of Medicine, Orlando, FL; Sang-Eun Song, PhD, Associate Professor, UCF College of Engineering and Computer Science, Orlando, FL; Yoon Hwang, DMA, Assistant Professor, UCF School of Performing Arts, Orlando, FL.

**Submission Type:** Health System Science (Health care delivery, improving the quality of healthcare for patients and populations, and/or business of medicine)

**Submission Category:** Quality Health Care, Patient Safety & Best Practices

**Presentation Type:** Poster Abstract Presentation

**Abstract Title:** Music as an Accessible Alternative to Traditional Medicine: A Literature Review on Music in Health Care

## Abstract

**Background/Knowledge Gap:** The Arts in Medicine (AiM) have historically been employed as a form of therapy for patients recovering from surgery in hospitals and to manage mental health. The use of music medicine can benefit patients by enhancing their healthcare experience and recovery, leading to an improved health outcome. Music as Medicine is a more recent subgroup of AiM that seeks to use music as part of the treatment plan for patients suffering from physical and mental health issues, rather than as an optional therapeutic practice. Alternative forms of medicine/treatment could lead to similar health outcomes as traditional medications with increased accessibility. While music therapy and its benefits are widely researched and appreciated, music medicine is a relatively new and much less understood treatment option. **Methods:** A literature review in PubMed using the keywords ((music in medicine) OR (music as medicine)) AND (interventions OR treatment) looking for studies reporting effectiveness of music in health outcomes when used as a treatment or intervention.

**Results:** Analysis of the 93 results showed that music helped to relieve anxiety in 23 studies (24.7%) and was most utilized as a treatment for anxiety, especially due to surgery, scans, and procedures. Music resulted in reduced pain for 11 studies (11.8%), including those with sickle cell, neuropathy, post-surgery, and fibromyalgia. A reduction in both anxiety and pain were noted in 12 studies (12.9%). Fatigue (n = 2, 2.2%), sleep/insomnia (n = 7, 7.5%), stress (n = 2, 2.2%), fine motor skills (n = 1, 1.1%), delirium (n = 1, 1.1%), schizophrenia (n = 1, 1.1%), and relaxation (n = 1, 1.1%) were shown to be improved by music when used as part of the treatment plan. No studies in the results showed that music was considered harmful to patients.

**Conclusions/Implications:** This review showed that music medicine has been utilized mainly for anxiety and pain reduction, and other reports showed potential for treating and managing various other medical concerns. The results commonly report that music medicine has been found to be a safe, efficacious, inexpensive, and noninvasive intervention that has a multitude of clinical uses for adult patients.

## References

### Learning Objectives

describe music as medicine, discuss the impact of music medicine on patient's health outcomes and accessibility to care, implement a new strategy to manage patient's care plans

## Abstract Reference Number: 38

**Authors:** Caroline Baughn, BS

**Co-authors:** Caroline Baughn, BS, Medical Student, 3rd Year, University of Central Florida College of Medicine, Orlando, FL; Pankaj Watal, MD, Department of Radiology, Nemours Children's Hospital, Orlando, FL; Lili Miles, MD, Department of Pathology, Nemours Children's Hospital, Orlando, FL.

**Submission Type:** Unusual Case Presentation (a unique, rarely seen clinical scenario with discussion of a patient)

**Submission Category:** Women's & Children's Health

**Presentation Type:** Poster Abstract Presentation

**Abstract Title: Rosai-Dorfman Disease: A Pediatric Case of Extranodal Osseous Disease.**

## Abstract

**Introduction:**

Rosai-Dorfman Disease (RDD), also known as Sinus histiocytosis with massive lymphadenopathy, is a rare histiocytic disorder. Recognized in 1969, RDD is characterized by the proliferation and accumulation of histiocytes in the lymph nodes or at other sites (nodal or extranodal RDD). Nodal RDD is more common, with around 40% of cases being extranodal proliferations, of which skin involvement is one of the most common.

Clinical presentation for RDD can be subtle and non-specific. Bilateral lymphadenopathy is the most common initial clinical presentation. RDD affects patients of all ages and ethnicities. The median age of onset is the second

and third decades of life, with a predilection for males and African Americans. This case report describes extranodal osseous RDD in a young boy, which has been rarely reported in the literature.

Case: A 16-month-old male was brought to the emergency department for a chief complaint of acute onset distal right arm pain. He was born at full term with no prior developmental concerns or hospitalizations. Initial radiograph revealed a lytic lesion with a wide zone of transition, cortical destruction and poorly defined periosteal reaction in the right distal radius, concerning for an aggressive lesion. A fine needle biopsy yielded scant tissue, with the diagnosis of possible osteomyelitis. Subsequent MRI confirmed a focal destructive process with presence of a prominent adjacent soft tissue component. An aggressive bone lesion such as Ewing sarcoma was favored. Overall imaging features were nonspecific. Bone curettage revealed a mixed inflammatory infiltration and the presence of large histiocytes showing emperipolesis. Immunohistochemistry revealed CD68+, S100+, and CD1a-histiocytes. Fungal, mycobacterial, and bacterial cultures were negative. PCR for *Kingella kingae* was also negative.

Diagnosis:

A diagnosis of extranodal osseous RDD with necrosis and marked acute and chronic inflammation was made based upon the morphological and immunohistochemical characteristics. The final diagnosis was confirmed by an external bone pathologist. Follow-up:

Follow-up imaging revealed no evidence of nodal RDD or other extranodal lesions. The primary bone lesion showed significant internal sclerosis at 2-month radiographic follow up suggestive of a healing response. As there is no standard RDD treatment, follow-up consisted of observation.

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## Learning Objectives

Describe the most common clinical presentation of Rosai-Dorfman Disease (RDD).

Identify the morphological and immunohistochemical characteristics of Rosai-Dorfman Disease (RDD).

Be aware of the diagnosis of RDD in the unusual location of young patients.

## Abstract Reference Number: 39

Authors: Cristina Delprete

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**Submission Type:** Health System Science (Health care delivery, improving the quality of healthcare for patients and populations, and/or business of medicine)

**Submission Category:** Surgery & Surgical Specialties

**Presentation Type:** Poster Abstract Presentation

### Abstract Title: Perception and Usage of Social Media Among Women in Orthopaedics

#### Abstract

##### Introduction

Social media is used as a tool for marketing, education, and connecting with colleagues has increased substantially amongst orthopaedic surgeons. The purpose of this study was to determine how female orthopaedic surgeons, fellows, residents, and medical students interested in orthopaedic surgery perceive personal and professional social media usage. Methods/Design

A 21-question anonymous survey regarding social media usage was distributed to female members of Ruth Jackson Orthopaedic Society (RJOS). Data collection lasted a total of 4 weeks, from July to August 2022. Data analysis was performed using descriptive statistics. Results/Findings

A total of 208 responses were received, comprised of 60 medical students (29%), 49 residents (24%), 8 fellows (4%) and 90 practicing orthopaedic surgeons (43%). 189 (91%) participants had a social media account. The most used platform was Instagram (166; 88%), followed by Facebook (163; 86%), and Twitter (90; 48%). While 141 participants (75%) reported connecting with professional orthopaedic organizations on social media, 60 (32%) reported not allowing these accounts to follow individual profiles. 51 (27%) participants reported altering their profiles and 20 (11%) reported deleting profiles for interviews for medical school (10; 17%), residency (36; 62%), fellowship (4; 7%), or faculty positions (3; 5%). When asked opinions on social media, 109 (53%) of participants "agreed" that social media is a good way to network within orthopaedic surgery. 20 (10%) "strongly agreed" and 62 (30%) "agreed" that personal events posted on social media can be considered unprofessional. 45 participants (22%) "agreed" with fear of gaining attention to their own social media profiles when engaging with professional accounts. Conclusions/Implications

Female medical students, residents, fellows and practicing orthopaedic surgeons are active on social media. While most participants endorsed social media as a beneficial way to network within orthopaedic surgery, many participants reported avoiding engagement with professional accounts or behaviors such as changing or deleting profiles. These perceptions and behaviors reflect a concern for perceived professionalism when utilizing social media, particularly in earlier stages of training. Maintaining separate personal and professional accounts may allow individuals to minimize such concerns while still utilizing social media platforms to engage and network with professional orthopaedic surgery organizations.

#### References

#### Learning Objectives

1. To understand that social media usage is popular amongst females interested in or practicing orthopaedic surgery at all stages of training.
2. To understand the benefits of having separate personal and private accounts to maximize engagement with professional orthopaedic organization while maintaining concerns for professionalism.



## Abstract Reference Number: 40

Authors: Rishika Singh

**Submission Type:** Case Presentation (A clinical scenario with discussion of a patient)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Poster Abstract Presentation

### Abstract Title: Unique Case of HIV Presenting as Possible High-Grade Lymphoma

#### Abstract

A 60-year-old African American male with no significant past medical history presented to the ER with a multitude of symptoms including 40-pound weight loss, abdominal pain, decreased appetite and fatigue for the past month. He also complained of drenching night sweats, fevers and dyspnea on exertion. Physical exam was significant for diffuse abdominal tenderness to palpation and several, asymmetric, firm, mobile lymph nodes including preauricular, cervical and inguinal lymph nodes. CT of the chest, abdomen and pelvis showed multiple <5mm pulmonary lesions and bulky retroperitoneal lymphadenopathy. Labs were significant for pancytopenia with WBC 2.0, Hb 9.9, Platelets 87 and elevated LDH of 428. Given the patient's B symptoms, quick onset, CT chest findings and lymphadenopathy, high grade diffuse lymphoma was highest on the differential along with infectious causes such as TB and fungal pneumonia. After his HIV test returned positive, the differential included HIV induced high grade lymphoma as well as other opportunistic pathogens including PJP or MAC. Bone marrow biopsy and lymph node biopsy were performed. The patient was started on broad spectrum antibiotics and antifungals as he was spiking fevers in the setting of leukopenia. Lab work later found disseminated histoplasmosis in the setting of new HIV. Bone marrow biopsy further confirmed disseminated histoplasmosis with normocellular bone marrow showing presence of yeast forms. The lymph nodes biopsied also returned with multiple non-necrotizing granulomas with giant cell reaction and no definitive evidence of neoplasm. HAART was started after HIV genotypic resistance testing, and he will be sent home on itraconazole and follow up in HIV clinic. This case was especially interesting in that despite having B symptoms, reticulonodular lung opacities and bulky lymphadenopathy, generally pointing towards a neoplastic process such as lymphoma, this patient was found to have new onset, HIV-associated disseminated histoplasmosis. This case provides an important learning opportunity to keep our differentials broad and cover all our bases even when a case may classically point towards one diagnosis.

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#### Learning Objectives

1. Examine a patient's case of sudden onset B symptoms, lymphadenopathy and pulmonary nodules and consider a wide differential diagnosis
2. Discuss the importance of maintaining a wide differential diagnosis even when a case classically points towards one diagnosis

## Abstract Reference Number: 41

Authors: Andrew Joseph, BS

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**Submission Type:** Clinical Science Presentation (A well-defined basic or clinical research project)

**Submission Category:** Bioethics & Medical Education

**Presentation Type:** Oral Abstract Presentation (On-Site in Memphis ONLY - 10 minute presentation)

**Abstract Title: Ethical Perspectives of Therapeutic Human Genome Editing from Philosophical, Theological, Public Opinion, and Research Perspectives: A Scoping Review**

### Abstract

**Background:** Human genome editing has been increasingly explored to determine if it can be used to eradicate genetic diseases like sickle cell disease, but it has also been surrounded by a wide variety of ethical dilemmas. The purpose of this study was to conduct a scoping review of the ethics of therapeutic human genome editing in terms of philosophy, theology, public perspectives, and research ethics.

**Methods:** A systemized search of PubMed, Embase, Ovid Medline, and Web of Science was conducted. The initial search resulted in 4,445 articles, and after removing 1,750 duplicates and screening the remaining 2,695 articles, 27 final articles were selected for the final analysis.

**Results:** From a philosophical and theological standpoint, therapeutic human genome editing was generally ethically acceptable. Worldwide public perspectives were also in agreement except for the Oceanic region, which disagreed mainly due to the possible effects on future generations. Lastly, human research ethics revealed that women were not always included in informed consent, and that child autonomy needs to be preserved.

**Conclusions:** Therapeutic human genome editing has more support from the general population when given accurate risks and benefits of the technology, but further research and regulation are needed to ensure a safe and practical application. Furthermore, this scoping review is germane to the use of human genomic engineering from a “social” standpoint such as the genetic optimization of otherwise healthy children. Further research is needed to determine adverse effects on the mother, fetus, and future generations.

### References

#### Learning Objectives

1. To discuss the ethical implications of therapeutic human genome editing from the perspective of philosophy, theology, public perspectives, and research ethics. 2. To discuss the ethical burden associated with therapeutic human genome editing

## Abstract Reference Number: 42

Authors: Vagharsh Antaneisan MD, MPH

Co-authors: Garcia Kenny, MD, Internal Medicine, PGY2, Norton Community Hospital, Norton, Virginia; Alam Rehan, MD, Internal Medicine, PGY2, Norton Community Hospital, Norton, Virginia  
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**Submission Type:** Unusual Case Presentation (a unique, rarely seen clinical scenario with discussion of a patient)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Oral Abstract Presentation (On-Site in Memphis ONLY - 10 minute presentation)

**Abstract Title: Junctional Bradycardia, Sign of Life-Threatening Ischemia**

**Abstract**

**Introduction:**

SA node dysfunction in the setting of acute infarcts in RCA territory has been well described in medical literature. On the other hand, there is not much literature discussing SA node dysfunction in chronic occlusion of RCA. In this case, we will discuss a patient who presented as CHF exacerbation without chest pain or elevation in troponin. He was found to be in junctional rhythm and later discovered to have 99% RCA occlusion on Left heart catheterization.

**Case Presentation:**

79-year-old with CAD, CHF and aortic stenosis presents to ER with progressive dyspnea on exertion, orthopnea, fatigue, decrease urine output last 14 hours, worsening lower extremity edema, and a 7 lb weight gain over the last 2 days. He was found to be in junctional rhythm at rate of 51. He was admitted and treatment was initiated for CHF exacerbation with proBNP of 3,315 and troponin <.30. Bradycardia/ sick sinus syndrome was considered to be the cause of CHF exacerbation. Cardiology was consulted. Management Initially patient was treated with diuretics for volume overload. Beta blockers were held in hopes of resolving the brady cardia and junctional rhythm. Electrophysiologist was consulted for temporary pacemaker since bradycardia persisted despite discontinuation of betablockers. Single chamber atrial pacer was placed, and rate was set at 80. Few minutes after the procedure patient became hypotensive (BP 62/50) and unresponsive. She subsequently lost her pulse and CPR was initiated. 5 rounds of CPR were completed with administration of epinephrine. During CPR and return of spontaneous circulation patient was found to have ST elevated MI in RCA territory. Interventional cardiology was consulted for urgent PCI.

**Outcome and follow up**

In the Cath lab it was noted that the right coronary artery, ostial branch had a 99.9 % occlusion. PCI with drug eluting stent was performed. Patient survived. Follow up ECG was notable for atrial fibrillation with rate of 90.

**References**

**Learning Objectives**

- The sinoatrial nodal artery is a branch of the RCA that supplies the SA node
- It is important to recognize that junctional escape rhythm can be a warning sign for life threatening RCA occlusion
- Increasing heart rate with placement of pacemaker in such setting could act as stress test and induce MI

**Abstract Reference Number: 43**

**Authors:** Kara La Gorio

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**Submission Type:** Clinical Science Presentation (A well-defined basic or clinical research project)

**Submission Category:** Women's & Children's Health

**Presentation Type:** Poster Abstract Presentation

**Abstract Title: Increasing Women's Comfort to Discuss Pelvic Health with their Primary Care Physician**

## Abstract

**Background/Knowledge Gap:** Pelvic floor anatomy and function is not typically covered in general education which causes discomfort and avoidance for women broaching this topic with their primary care physician (PCP).

Increasing patient education of the sensitive topic of pelvic health may increase women's comfort in addressing concerns with their PCP. More research is needed for improved care for women.

**Goals:** Discern how improving patient education affects women's level of comfort when discussing their pelvic health with their PCP.

**Methods/Design:** Fifteen female participants (aged 18 to 49) in the Western Arkansas region were recruited through purposeful sampling. Of the participants, 80% were Caucasian, 86% had earned at least a bachelor's degree, and 53% had previously given birth. Participants completed a survey with a 30-item questionnaire aimed toward pelvic floor knowledge and a Likert scale question regarding comfort level in discussing pelvic health with their PCP. Once the survey was completed, the participants engaged in a virtual pelvic health education session with movement based educational videos and question and answer sessions. The questionnaire was administered immediately following the session and again one-month later. The participants' comfort level was measured before the educational session (pre) and one-month following (post-2).

**Results/Findings:** The results were analyzed using SPSS software with ANOVA for the questionnaire and a Wilcoxon Signed Rank Test for participant comfort levels. The overall scores for the questionnaire for pre, post-1, and post-2 surveys were 58.4%, 91.1%, and 94.0% respectively. There was a statistically significant difference ( $p < 0.05$ ) between pre/post-1 knowledge and pre/post-2 knowledge; however, there was no difference in knowledge between post-1 and post-2 knowledge. Participants comfort level on the Likert scale significantly increased from pre to post-2 with an average score of 0.2 to 2.4 ( $p < 0.001$ ). Through a movement based pelvic health education session, this study may demonstrate that improving a participant's knowledge of pelvic health increases their reported comfort level to address pelvic health with their PCP.

**Conclusion/Implication:** Results of this study may that an increase in a participant's knowledge of pelvic health could be related to increased comfort in discussing their pelvic health with a PCP and increased knowledge may optimize pelvic health care for women.

## References

### Learning Objectives

Objective 1: Discuss pelvic floor anatomy education and women's knowledge of the topic.

Objective 2: Review women's discomfort when discussing their pelvic health with their primary care physician.

Objective 3: Identify an evidence-based approach to increase women's comfort to discuss their pelvic health with the primary care physician for improved care.

## Abstract Reference Number: 44

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**Submission Type:** Unusual Case Presentation (a unique, rarely seen clinical scenario with discussion of a patient)

**Submission Category:** Women's & Children's Health

**Presentation Type:** Poster Abstract Presentation

**Abstract Title:** Acute Psychosis Secondary to Anti-NMDA Receptor Encephalitis: A Commonly Underdiagnosed Disorder in Healthy, Young Women

## Abstract

**INTRODUCTION:** Autoimmune anti-NMDA receptor (NMDAR) encephalitis is a rare paraneoplastic disease often associated with mature cystic (dermoid) teratomas. Though well-documented and treatable, anti-NMDAR encephalitis is underdiagnosed in young, healthy females. A vague prodromal state prior to acute psychotic symptoms can delay diagnosis and expose a previously healthy patient to serious and potentially fatal complications.

**CASE PRESENTATION:** We describe a healthy 28-year-old nulliparous patient who developed neurologic and psychiatric symptoms. She was eventually diagnosed with anti-NMDAR encephalitis after a neurologist recognized her characteristic new-onset erratic behavior and lapses in consciousness as possible autoimmune in etiology. The patient's mentation continued to deteriorate after empiric anti-NMDAR encephalitis treatment with methylprednisolone and IVIG immunotherapy. Pelvic ultrasound visualized a left adnexal cyst and an urgent laparoscopic left salpingo-oophorectomy was performed to resect a teratoma, a known potential source of anti-NMDAR antibodies. The patient's clinical deterioration stabilized after her oophorectomy. An anti-NMDAR IgG antibody test confirmed the diagnosis. Though her post-operative recovery is complicated by respiratory failure secondary due to esophageal perforation and pneumomediastinum, deep venous thrombosis, seizures, and enterocutaneous fistula, over the next several months patient's status improved and she experienced a complete recovery within one year, except for complete memory loss of her acute psychosis phase and her hospital stay.

**FINAL DIAGNOSIS:** The patient's positive anti-NMDAR IgG antibody test is diagnostic for anti-NMDA receptor encephalitis.

**MANAGEMENT/DISCUSSION:** We present an interesting case of a previously healthy 28-year-old female who demonstrated a clinical deterioration in her behavior and mentation over the course of several weeks. She was seen in the emergency department several times before she was correctly diagnosed with anti-NMDAR encephalitis. This is a rare but well-documented disease most typically seen in women of reproductive age and frequently caused by anti-NMDAR antibodies produced by an ovarian teratoma. Failure to diagnose this disease promptly puts patients at risk for chronic or permanent neurological sequelae due to untreated encephalitis. Increased clinical suspicion and inclusion of anti-NMDAR encephalitis in the differential diagnosis of acute psychosis facilitates early treatment, which can markedly improve patient recovery and outcomes.

## References

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## Learning Objectives

The goal of the presentation is to discuss a rare, yet potentially fatal phenomenon of a typically benign condition in a healthy, female patient. Upon completion of this lecture, learners should be better prepared to recognize the association of acute psychosis secondary to anti-NMDAR encephalitis as a serious complication of commonly benign mature cystic (dermoid) teratomas. The goal is to increase awareness of anti-NMDAR encephalitis secondary to dermoid cysts as a potential differential for acute psychosis in young, healthy female patients.

## Abstract Reference Number: 45

Authors: Miriam Matthews, MB BCH BAO

Co-Authors: Miriam Matthews, Medical Student, University College Dublin, Dublin, Ireland; Laura Rosas, MD, Resident Physician, Psychiatry Department, University of Chicago, Chicago, IL; Lynnette Mazur, MD, MPH, Professor Emeritus, McGovern Medical School, Houston, TX

**Submission Type:** Unusual Case Presentation (a unique, rarely seen clinical scenario with discussion of a patient)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Poster Abstract Presentation

**Abstract Title:** Proteus Syndrome in a Young Adolescent

## Abstract

**Introduction** Proteus syndrome (PS) is a rare, progressive, asymmetric overgrowth syndrome that presents with symptoms of varying severity. PS most commonly affects the limbs and occasionally presents with hamartomas and vascular malformations. It was named by Hans-Rudolf-Wiedemann in 1983 after the Greek shapeshifter God Proteus, and it is thought that Joseph Merrick (the so-called “Elephant Man”) had PS. **Case presentation** This case report presents a 13-year-old boy with progressive enlargement of the left leg that was initially mistaken for filariasis. The boy’s physical examination was remarkable for a body mass index greater than 95% for his age, enlargement of his left leg with areas of cratered scars below the knee, and a leg-length discrepancy. He had no macrocephaly, ocular anomalies, hemangiomas, nevi, or scoliosis.

## Final/Working Diagnosis

The differential diagnoses included hemihyperplasia, Proteus syndrome (PS), and Klippel Trenaunay syndrome (KTS). Because of the progressive enlargement of the leg and lack of vascular markings, PS was considered the most likely diagnosis. One pathognomonic sign is the presence of cerebriform connective tissue nevi (CCTN) that most commonly appear on the palms and soles. The lesions have not been observed at birth but develop slowly during adolescence. Their presence also distinguishes PS from KTS. **Management/Outcome/and or Follow-up.** Complications vary in severity and may include dermatologic malformations, central nervous system manifestations, pulmonary emboli, skeletal overgrowth, and deep venous thromboses (DVT). When possible, consultations with genetics, pediatrics, dermatology, and orthopedics are helpful. Patients and caregivers may feel isolated because of progressive disfiguring, so all may benefit from referral to behavioral health care providers and family support groups. Due to the progressive nature and risk of complications, such as limb length discrepancy, deep venous thromboses, skin ulcerations, and malignant neoplasms, PS should be considered in a differential diagnosis with other overgrowth syndromes. The life expectancy for PS depends on the severity of the complications but ranges between 9 months and 29 years. The patient’s father was informed of the possible complications and was given a guarded prognosis and life expectancy of a patient with PS.

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## Learning Objectives

- Describe a rare condition with less than 200 cases published in literature - Differentiate between Proteus syndrome and other overgrowth syndromes that can present similarly

## Abstract Reference Number: 46

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**Submission Type:** Unusual Case Presentation (a unique, rarely seen clinical scenario with discussion of a patient)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Poster Abstract Presentation

## Abstract Title: Dermatological Toxicities of Pembrolizumab

### Abstract

**Introduction** Pembrolizumab is a PD-L1 inhibitor used in the treatment of malignant melanoma, lung cancers, and other malignancies. Pembrolizumab has been associated with dermatological side effects such as vitiligo, psoriasis,

dermatomyositis, bullous pemphigoid, maculopapular rash and pruritis. We describe the side effect of vitiligo-like lesions in a patient receiving Pembrolizumab for metastatic melanoma. Photographs showing discoloration on the hands and scalp of the patient are included. Case presentation A 63-year-old man with metastatic stage IV melanoma underwent treatment for 5 months with pembrolizumab. Following his 5th cycle patient presented with discoloration of his hands and scalp consistent with vitiligo. The patient however was tolerating immunotherapy well and had no prior history of vitiligo or other autoimmune conditions. A Follow-up PET scan at 6 months showed no hypermetabolic activity, indicating no active disease. The appearance of vitiligo remained unchanged at six months follow-up.

#### Final/Working Diagnosis

Vitiligo is an autoimmune skin disorder with the loss of functioning melanocytes. The aetiology of immunotherapy-induced vitiligo is unknown but has been suggested to be related to the breakdown in immune tolerance towards normal melanocytes due to the release of melanocytic antigens from the breakdown of immune-therapy-mediated tumor destruction. The diagnosis is clinically made, with a history of use of immune checkpoint inhibitor therapy being essential to confirm immunotherapy-induced vitiligo. The differential diagnosis considered in this case included pityriasis versicolor, pityriasis alba, lichen planus, and discoid lupus.

Immunotherapy-induced vitiligo differs from classic vitiligo in the pattern of asymmetric, white-flecked macules compared to symmetrical well-circumscribed macules and the lack of the Koebner phenomenon.

#### Management/Outcome/and or Follow-up.

Immunotherapy-induced vitiligo can persist after treatment is discontinued, patients should be informed of this risk before initiating treatment. While vitiligo-like lesions following immunotherapy are rare, it is important for clinicians to recognize them, as they potentially can be associated with a positive response to treatment. Further studies should explore this association.

## References

### Learning Objectives

Describe the dermatological toxicities of PD-L1 checkpoint inhibitors in the treatment of malignant melanoma.

## Abstract Reference Number: 47

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**Submission Type:** Health System Science (Health care delivery, improving the quality of healthcare for patients and populations, and/or business of medicine)

**Submission Category:** Bioethics & Medical Education

**Presentation Type:** Poster Abstract Presentation

### Abstract Title: Integrating A Student Co-Created Health Systems Science Curriculum Within UME

#### Abstract

Background: It has become increasingly evident that the professional demands on the modern physician are different than is served by current educational paradigms focusing on the basic and clinical sciences. These gaps in training must be met through the adoption of the new “third pillar” of medical education - Health System Science (HSS). HSS is the study of how healthcare is delivered, how healthcare professionals work together to deliver that care, and how the health system can improve patient care and healthcare delivery. When considering that osteopathic medical students comprise nearly two-thirds (63%) of US medical students and that 56% of

osteopathic graduates enter primary care, it is clear that osteopathic UME serves a foundational role in ensuring the quality and efficiency of healthcare in the US. Objective:

Describe the development and ongoing implementation of a student-co-created, four-semester, HSS-based learning model into the UME curriculum. We also seek to describe the benefits of allowing current medical students to participate in curricular changes that benefit both the participating students and the COM.

Approach:

Using a systems-based hybrid lecture-experiential model, students will progress through the eleven domains of the HSS discipline. Each domain contains learning objectives mapped to the National Board of Osteopathic Medical Examiners (NBOME) Master Blueprint and American Association of Colleges of Osteopathic Medicine (AACOM) Core Competencies documents, which served as the framework for this project. Content will be delivered by field experts within each domain such as COM faculty, physicians, administrators, and leaders from our affiliated hospital system and the local community.

Conclusion:

This curriculum maps to nearly two-thirds of core competencies within the NBOME Master Blueprint and AACOM Core Competencies documents. A critical piece to our success was involving faculty in the development of the proposal which helped to foster a unified vision and sense of ownership for curricular change. Time management strategies were also important in this project's execution, as this endeavor was taken on in addition to the required duties of students and faculty. We believe that our proposal is the first of its kind in presenting an HSS curriculum.

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<https://www.ama-assn.org/topics/ume-curriculum-design>

## Learning Objectives

Objective 1: Present Health Systems Science as the “third pillar of medical education” and as a necessary component of current osteopathic medical education.

Objective 2: Introduce our unique development of a systems-based Health Systems Science learning model co-created with medical students at our institution.

Objective 3: Discuss the benefits of involving select medical students in curricular revision – to the benefit of the medical college, as well as to the students involved.

## Abstract Reference Number: 48

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**Submission Type:** Health System Science (Health care delivery, improving the quality of healthcare for patients and populations, and/or business of medicine)

**Submission Category:** Public Health & Environmental Medicine

**Presentation Type:** Poster Abstract Presentation

**Abstract Title: Addressing COVID-19 Vaccine Uptake in East Texas through Community Health Worker Engagement and the Community Health Integrated Response Portal (CHIRP)**



## Abstract

Background: Inequities in the COVID-19 vaccine rollout have created disparities in uptake across the United States, leading to a risk of COVID-19 immunity being unevenly distributed. Compounding this issue of accessibility is vaccine hesitancy. Particularly in under-resourced areas, Community Health Workers (CHWs) play key roles in ensuring the distribution of high-quality information by working with community members and trusted community leaders. In East Texas, a digital health platform called the Community Health Integrated Response Portal (CHIRP) has been developed to help CHWs utilize vaccination rate data, community partner data, and CDC Social Vulnerability Index (SVI) data in their outreach efforts in an integrated and semi-automated fashion. We are conducting an ongoing evaluation study of CHIRP users and designers. The purpose of this interview-based study is to better understand the work of CHWs in a 100-county area in East Texas community who work with CHIRP and to assess the effectiveness of CHIRP as a tool to mobilize data to improve COVID-19 vaccine uptake. Methods: 16 interviews with 10 participants in two rounds of interviews have been conducted since February 2022. Participants are comprised of 4 CHIRP designers, 2 CHW managers, and 4 CHWs. These are members of the core team involved in implementation of the CHIRP intervention in the 100-county region in East Texas that is covered by Texas AHEC East. Results: Most CHWs consistently use the various mapping features in CHIRP to guide their outreach to specific areas of their assigned territories. These maps include CDC SVI data and COVID-19 vaccination rate data by ZIP code. CHWs also use information on the map to locate community partners and to “drop pins” with information about newly identified community partners. Furthermore, CHIRP allows CHWs to enter data about who they work with that can be accessed by managers and designers for program improvements and reports to the funder. Conclusions: CHIRP is a digital public health platform that allows for the identification of high-risk regions and tracking of CHW activities regarding COVID vaccination. Data in CHIRP allow for flexibility and accessibility that may facilitate the identification and response to future public health threats.

## References

### Learning Objectives

1. Explain the purpose of the Community Health Integrated Response Portal (CHIRP)
2. Describe how Community Health Workers (CHWs) have used the Community Health Integrated Response Portal (CHIRP) to guide their outreach
3. Identify the role that CHWs play in under-resourced areas

## Abstract Reference Number: 49

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**Submission Type:** Clinical Science Presentation (A well-defined basic or clinical research project)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Poster Abstract Presentation

## Abstract Title: Common Dermatologic Conditions in Athletes

### Abstract

#### Introduction

Sports dermatology focuses on dermatoses commonly encountered in athletes and sports medicine physicians commonly encounter these in athletes. Early diagnosis and treatment are essential for reducing additional clinic visits, procedures, and time to return to play. Therefore, it is necessary for sports medicine physicians to be aware of the clinical presentation and treatment options. The purpose of this study is to summarize the clinical presentations and treatment associated with common skin dermatoses in athletes. Methods

A literature review was conducted using PubMed, focusing on dermatologic conditions in athletes. The following keywords were used to identify relevant pathologies: “cutaneous manifestations” “athletes” and “sports dermatology.” 23 dermatologic conditions commonly seen among athletes were identified and included. The etiology, treatments, and prevention of these conditions were extracted from the included studies. Results Infectious diseases (bacterial, fungal, viral, and parasitic) comprise 8.5% of high school sports-related skin injuries and 20.9% of college sports-related injuries [1]. Most infections can be treated with topical or oral agents; however, infections that have progressed due to late intervention may require drainage or intravenous treatment [2]. Aside from infections, inflammatory dermatoses arise from a causative agent that cause conditions such as allergic contact dermatitis, irritant contact dermatitis, urticaria, exercise induced anaphylaxis, and sun-related skin neoplasms. For example, mercaptobenzothiazol in swimming caps has been shown to cause contact dermatitis and using a cap without this chemical helps prevent allergic reactions in athletes [3]. Additionally, sporting equipment can cause mechanical stress on the skin which can lead to traumatic dermatoses. For example, the heavy protective gear worn by football and hockey players has been identified as the etiology of acne mechanica in these athletes [4]. Conclusion The results of this study were compiled to create a guide for sports physicians and surgeons who may encounter these dermatoses because these conditions have an impact on an athlete’s ability to return to play. It is crucial that sports physicians are aware of both common and uncommon skin dermatoses in athletes so treatment can be started promptly and accurately.

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## Learning Objectives

- Provide an educational tool for sports physicians to identify common and uncommon dermatologic conditions seen in athletes.
- Differentiate between infectious, inflammatory, and traumatic dermatoses seen in athletes.
- Understand etiologies and treatment options for each category of sports dermatoses

## Abstract Reference Number: 50

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Co-authors: Scout M Treadwell, BA, Medical Student, 3rd Year, Tulane School of Medicine, New Orleans, LA; Maxwell Green, MS, Medical Student 3rd Year, Tulane School of Medicine, New Orleans, LA; Andrew McKernan, MD; John Carlson, MD, Pediatric Residency Program Director, Tulane School of Medicine, New Orleans, LA.

**Submission Type:** Clinical Science Presentation (A well-defined basic or clinical research project)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Poster Abstract Presentation

## Abstract Title: Sensitization to *Rhizopus stolonifer* and the Development of Allergic Conditions

### Abstract

Introduction: The common bread mold, *Rhizopus stolonifer*, is implicated in serious fungal infections such as mucormycosis. The availability of extracts has led to the inclusion of *R. stolonifer* in screening tests used in the evaluation of patients with aeroallergen sensitization. However, sensitization to *R. stolonifer* and the development of allergic rhinitis and asthma is poorly studied. We performed a metanalysis to clarify the role of *R. stolonifer* in

human airway hypersensitivity disorders. Methods: A systematic review was conducted using PubMed, Embase, and Web of Science using the search terms “*Rhizopus stolonifer*” AND rhinosinusitis OR asthma OR rhinitis OR conjunctivitis OR allergic fungal sinusitis OR allergic bronchopulmonary aspergillosis. Studies were included only if they used clinical data along with human sera. Results: Nine studies were included in this review. Findings included IgE mediated sensitization in both allergic rhinitis and asthma [1]. Additionally, one study reported asthmatic patients who initially tested negative to a standard panel of fungal aeroallergens that later tested positive when *R. stolonifer* and other fungi were included in the panel (n=44/454) [2]. Similarly, another study investigated sensitizations to thirty-five perennial allergens in asthmatic patients who previously had negative allergen testing [3]. 16% of asthmatic patients reported sensitivity to *R. stolonifer* despite previously being considered non-atopic (n=36/214) [3]. Interestingly, one case report studied two cases of allergic bronchopulmonary mycosis with positive sensitization to *R. stolonifer* after a negative IgE sensitization to *Aspergillus fumigatus* [4]. Conclusions: Although rare, sensitization to *R. stolonifer* is associated with allergic conditions, and should be evaluated, specifically in the context of apparent hypersensitivity disorders of the airway with negative work-up for more standard sensitizations.

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## Learning Objectives

1. Establish the significance of *R. stolonifer* and its association with allergic conditions.
2. Demonstrate the importance of *R. stolonifer* as both an aeroallergen and the fungi implicated in Mucormycosis.
3. Emphasize including *R. stolonifer* when testing for fungal sensitivities.

## Abstract Reference Number: 51

Authors: Geetha Gowda, MS, BA

Co-authors: Scout M Treadwell, BA, Medical Student, 3rd Year, Tulane School of Medicine, New Orleans, LA; Maxwell Green, MS, Medical Student 3rd Year, Tulane School of Medicine, New Orleans, LA; Andrew McKernan, MD; John Carlson, MD, Pediatric Residency Program Director, Tulane School of Medicine, New Orleans, LA.

**Submission Type:** Clinical Science Presentation (A well-defined basic or clinical research project)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Poster Abstract Presentation

## Abstract Title: Sensitivity to *Aureobasidium Pullulans* and the Severity of Asthma with Environmental Risk Factors

### Abstract

Introduction: The fungi, *Aureobasidium pullulans*, has been reported as an aeroallergen and is commercially available as an extract when screening for sensitization to environmental allergens. Using these extracts it is possible to screen for sensitization to *A. pullulans* through skin prick testing or as part of a serum ImmunoCAP

assay for serum-specific IgE. However, most allergists do not routinely screen for this sensitization. We undertook a systematic review of the literature to examine the evidence linking *A. pullulans* sensitization to human disease. Methods: A systematic review was conducted using PubMed, Embase, and Web of Science using the search terms "Aureobasidium pullulans" AND rhinosinusitis OR asthma OR rhinitis OR conjunctivitis OR allergic fungal sinusitis OR allergic bronchopulmonary aspergillosis. Studies were included only if they used clinical data along with allergy testing. Results: Fifteen studies were included in this review. Two studies reported fungal sensitization to *A. pullulans* leading to greater severity of asthma specifically in asthmatic patients living in homes damaged by Hurricane Sandy [1,2]. Specifically, one study found that children living in Hurricane Sandy damaged homes had measurable IgE to common fungi with *A. pullulans* being one of the most prevalent (19%) [1]. Similarly, another study administered skin prick testing in asthmatic patients with common aeroallergens including *A. pullulans* [3]. Results indicated that sensitization to *A. pullulans* was significantly associated with increased asthma severity ( $p=0.006$ ) [3]. Conclusions: The results of this systematic review demonstrate the correlation between hypersensitivity to *A. pullulans* and the severity of asthma. Although sensitization is uncommon, sensitization to *A. pullulans* should be considered as a causative agent when evaluating patients with severe asthma in conjunction with environmental risk factors.

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## Learning Objectives

1. Examine sensitizations to less common aeroallergens such as *A. pullulans*.
2. Discuss *A. pullulans* association with the development and worsening of asthma in the setting of environmental risk factors.
3. Recommend testing for *A. pullulans* when evaluating patients with severe asthma in conjunction with environmental risk factors.

## Abstract Reference Number: 52

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**Submission Type:** Clinical Science Presentation (A well-defined basic or clinical research project)

**Submission Category:** Women's & Children's Health

**Presentation Type:** Poster Abstract Presentation

**Abstract Title:** The Role of the Gut Microbiota and P-cresol in the Pathophysiology of Autism Spectrum Disorder

## Abstract

**Background.** Autism Spectrum Disorder, involving a myriad of cognitive and social deterioration symptoms, has been profoundly studied to find definitive treatment for those diagnosed. The gut microbiota has been linked to several neurologic diseases, including ASD, due to the proposed connection known as the gut-brain axis and more prominent roles in generating a diverse range of metabolites. As a product of pathogenic and neurotoxic bacteria competing with the healthy microbes in the gastrointestinal tract, p-cresol and its downstream products have been shown to be significantly elevated in ASD patients. P-cresol, a tyrosine derivative, has been examined for its effects on neurotransmitter metabolism and neuroinflammation - two categories of focus as possible causative agents in the pathogenesis of autism. **Methods.** An extensive literature review was conducted using PubMed. **Results.** P-cresol levels are elevated in patients with ASD due to an increased proportion of pathogenic bacterial species such as *Clostridium* and *Escherichia*, which produce p-cresol. This metabolite covalently binds to dopamine beta-hydroxylase which converts dopamine to norepinephrine, irreversibly inhibiting it. The resulting increase in dopamine precipitates dysfunctional dopamine metabolism and the manifestation of ASD symptomatology. **Conclusion.** P-cresol, a useful marker in understanding the influence of gut microbiota in the pathophysiology of autism spectrum disorder, has been linked to alterations of dopamine metabolism.

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### Learning Objectives

1. Describe the role of the gut microbiome in the production of p-cresol
2. Discuss the role of p-cresol in dopamine metabolism
3. Analyze the downstream impacts of altered dopaminergic pathways

### Abstract Reference Number: 53

Authors: Luke Anderson, MS

**Submission Type:** Clinical Science Presentation (A well-defined basic or clinical research project)

**Submission Category:** Surgery & Surgical Specialties

**Presentation Type:** Poster Abstract Presentation

### Abstract Title: Evaluation of Multidisciplinary High-Risk Pregnancy Clinic

#### Abstract

**Background** – Prior to the COVID-19 pandemic, parents expecting a newborn with myelomeningocele at the authors' institution were routinely seen by a neurosurgeon for prenatal consultation and education to prepare for future challenges as part of a multi-disciplinary clinic. The purpose of this study is to evaluate the perception of usefulness and effectiveness of the prenatal, multidisciplinary, high-risk pregnancy clinic (HRPC) and retrospectively determine what information families wish they had learned. **Methods** – Mothers of children with spina bifida completed a demographic survey about their HRPC experience. Using a five-point Likert scale, mothers evaluated their overall preparedness, spina bifida education, delivery plans, surgical expectations, and expectations in terms of quality of life and development. Comments were collected regarding which portion of the educational process was most useful, what was unhelpful/anxiety-causing, and what they wish would have been included in the process. Descriptive statistics are reported.

**Results** – Seventy-one mothers completed the survey (of 72 approached, 98.6%). Thirty-eight (53.5%) received no prenatal education, 9 (12.7%) received prenatal education at other institutions, and 24 (33.8%) attended HRPC at the authors' institution. Mothers who attended HRPC felt more informed and prepared throughout their pregnancy ( $M = 4.28$ ) compared to mothers who did not ( $M = 3.47$ ). Mothers who received prenatal counseling from the authors' HRPC environment or other clinics perceived it as beneficial, answering "agreed" or "strongly agreed" with the statement "I benefited from the discussion in prenatal clinic" (79.2% and 78%, respectively). When scoring how well their experience met their expectations, based on what they knew before childbirth, the average was 3.66 among parents who attended HRPC clinic versus 3.26 for those who did not. The main perceived benefits were connecting parents to social support groups and meeting the coordinator to help navigate the process. **Conclusion** – Prenatal counseling and the HRPC provide perceived utility to families and mothers.

#### References

#### Learning Objectives

Implement a new strategy for educating and counseling mothers and families of children who are diagnosed prenatally with myelomeningocele.

## Abstract Reference Number: 54

Authors: Josh Matthews, MBBS

Co-authors: Miriam Matthews, Year 3 Medical Student, University College Dublin School of Medicine  
Veneetha Cherian, MD FRCSC, Neurology, Michael E. DeBakey VAMC Neurology, Houston, TX

**Submission Type:** Unusual Case Presentation (a unique, rarely seen clinical scenario with discussion of a patient)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Poster Abstract Presentation

### Abstract Title: The Diagnostic Dilemma of Visual Hallucinations

#### Abstract

Introduction: Visual hallucinations formed or unformed have been correlated to the occipital and temporal lobes. Isolated episodes with no other focal deficits can cause diagnostic dilemmas. We present 2 cases of formed and unformed visual hallucinations respectively as post-stroke sequelae that were misdiagnosed.

Case Presentations:

Case 1 was a 64-year-old lady with diabetes, hypertension, hyperlipidemia, and a positive covid screen that presented with severe headache and developed daily formed hallucinations 2 days later that persisted for 3 weeks. The patient presented to primary care complaining of bizarre images of people, crawling insects, spaceships, and flashlights all over that raised suspicion of a psychotic episode but otherwise intact mentation. Neurology was consulted, MRI showed occipital stroke, levetiracetam was started for occipital seizures with good response. Case 2 was a 63-year-old male with a prior significant cardiac history, endocarditis, bioprosthetic valvular replacement, and previous left occipital stroke treated by neurology with levetiracetam for occipital seizures. The patient was lost to follow up and antiepileptic medication was replaced with valproic acid with a suspected diagnosis of migrainous headache. The patient then presented to neurology 3 years later with almost daily episodes of unformed visual hallucinations with confusion and headaches similar to the initial presentation. Neuro exam revealed right homonymous hemianopia with MRI evidence of left occipital gliosis.

The patient was diagnosed with occipital seizures and restarted on levetiracetam.

Management: In both these cases of occipital strokes the correct diagnosis of post-stroke seizures with management leads to the resolution of symptoms of visual hallucinations.

Conclusion: Isolated occipital seizures presenting with visual hallucinations can be misdiagnosed as a psychotic or a migraine spell. Hence detailed evaluation with a neurology referral is warranted for persisting episodes.

#### References

#### Learning Objectives

Examine how visual hallucinations are commonly misattributed to migraines and psychogenic manifestations. Describe how visual hallucinations can be an isolated symptom of stroke without other neurological deficits such as weakness.

## Abstract Reference Number: 55

Authors: Patrick ryan, MS

Co-authors: Bailey J Ross, MD, Orthopaedic Surgery, PGY1, Emory School of Medicine; Michaela Stamm, MS, Research Assistant, Tulane University School of Medicine; William F. Sherman, MD, MBA, Orthopaedic Surgery, Tulane University School of Medicine; Wendell Heard, MD, Orthopaedic Surgery, Tulane University School of Medicine; Mary K. Mulcahey, MD, Orthopaedic Surgery, Tulane University School of Medicine

**Submission Type:** Clinical Science Presentation (A well-defined basic or clinical research project)

**Submission Category:** Surgery & Surgical Specialties



**Presentation Type:** Oral Abstract Presentation (On-Site in Memphis ONLY - 10 minute presentation)

**Abstract Title: Outcomes of Medial Patellofemoral Ligament Reconstruction with and without Concomitant Tibial Tubercle Osteotomy for Treatment of Patellar Instability**

**Abstract**

Background: Patellar instability is most common in young females and often requires surgical treatment. The purpose of this study was to compare postoperative complication rates between patients who underwent medial patellofemoral ligament reconstruction (MPFLR) versus concomitant medial patellofemoral ligament reconstruction with tibial tubercle osteotomy (MPFLR/TTO), while also examining the effect of demographic factors on patient outcomes. Methods: Using the PearlDiver database, a retrospective cohort study was performed using de-identified medical records of patients who underwent MPFLR or MPFLR/TTO. Each patient cohort was queried for demographic information (age, sex, CCI score), rates of diabetes mellitus, hypertension, and tobacco use, and rates of post-surgical complications including infection, procedures to treat knee stiffness, patellar fracture, and revision MPFLR at one and two years. Rates of postoperative complications were compared via multivariable logistic regression.

Results: 4,095 patients with patellar instability met inclusion criteria, including 1,296 (31.6%) males and 2,798 (68.3%) females. The MPFLR/TTO cohort exhibited a significantly lower rate of revision MFPLR at two years (0.8% vs 1.9%, OR 0.33) (Table 1). At one and two years postoperatively, all other complication rates were statistically comparable between surgical groups. Independent of index procedure, patients aged < 21 years exhibited significantly lower rates of procedures for knee stiffness at one (OR 0.35) and two years (OR 0.35) compared to older patients. Male patients exhibited a significantly lower rate of procedures for knee stiffness than females at one (0.50) and two years (OR 0.46). Tobacco use was associated with a significantly higher rate of post-operative infection at two years after the index procedure (OR 2.35).

Conclusion: The MPFLR cohort exhibited significantly higher rates of revision surgery at two years, compared to the MPFLR/TTO cohort. Patient age under 21 years was associated with significantly lower rates of any complication and requiring procedures for knee stiffness, male sex was associated with a significantly lower rate of requiring procedures for knee stiffness, and tobacco use was associated with a significantly higher rate of surgery for post-operative infection. This information can assist surgeons when counseling patients before undergoing these procedures.

**References**

**Learning Objectives**

- Describe the different complication profiles for patients undergoing MPFLR vs MPFLR/TTO.
- Discuss how certain demographic characteristics affect outcomes in patients who undergo surgical treatment for patellar instability.

**Abstract Reference Number: 56**

Authors: Lauren Powell, DO

Co-authors: Lisa Bundy, MD, Emergency Medicine, Attending Physician, Magnolia Regional Health Center, Corinth, MS.

**Submission Type:** Case Presentation (A clinical scenario with discussion of a patient)

**Submission Category:** Emergency & Disaster Medicine

**Presentation Type:** Poster Abstract Presentation

**Abstract Title: Use of Point of Care Echocardiogram in Cardiogenic Shock and How It Can Change Management in the Emergency Department**

## Abstract

Introduction: Shock is commonly seen in the emergency department and the ability to quickly determine what kind of shock can be lifesaving in the emergency department (ED). Patients in cardiogenic shock need different treatment than patients with other types of shock. Being able to use bedside echocardiogram to rule in or rule out cardiogenic shock can change management, especially in a rural ED. Case Presentation: A 53 y/o female, status post mitral valve replacement, presents to ED complaining of dyspnea and chest pain. EMS found the patient with altered mentation and cold, clammy skin. When EMS arrived, they were unable to find a blood pressure. Patient arrived in shock and respiratory failure. On exam, patient is lethargic in respiratory distress with altered mental status. Patient has bilateral 3+ pitting edema to the level of the knees. Her skin is cool and clammy with mottling noted in feet bilaterally. Initial labs showed a potassium of 8.7, creatinine of 4.4, and a BUN of 53. ABG shows a pH of 7.106, PCO<sub>2</sub> of 72, PO<sub>2</sub> of 10, and a HCO<sub>3</sub> of 22.9. A bedside 2D echocardiogram was performed. The parasternal long axis showed an increased EPSS and global hypokinesis with a severely decreased ejection fraction (EF) of 20%. The apical four chamber showed dilated right atrium and right ventricle. IVC views showed a plethoric IVC with increased pressures in the hepatic vein. Diagnosis: Cardiogenic Shock Management: Initially, the patient came in for undifferentiated shock with IV fluids running by EMS. When the bedside echocardiogram revealed cardiogenic shock within minutes of arrival, IV fluids were stopped, and Levophed and dobutamine were started. By using bedside ultrasound, undifferentiated shock was appropriately diagnosed and this patient's management was geared toward her specific needs. Levophed was initiated due to hypotension, and dobutamine was added for the inotropic effects to treat cardiogenic shock. The patient was accepted for transfer at the hospital that performed her procedure. Prior to transfer, the patient's color improved and she had a systolic blood pressure in the 130s.

## References

### Learning Objectives

1. Describe how point of care echocardiogram can change management in the emergency department 2. Discuss how proficiency and efficiency in point of care ultrasound can impact patient care in the emergency department

### Abstract Reference Number: 57

Authors: Daniel Lauffenburger, BS

**Submission Type:** Case Presentation (A clinical scenario with discussion of a patient)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Poster Abstract Presentation

### Abstract Title: Hypocupremia: A Sequela of Bariatric Surgery

## Abstract

Introduction: Copper is an important transition metal that acts as a cofactor for several enzymes that play a role in maintaining normal antioxidant, hematological, skeletal, vascular, and neurological function. Copper deficiency, or hypocupremia, can be a sequela of inherited disorders like Menkes disease and Wilson's disease. Acquired copper deficiency may result from zinc toxicity, use of total parenteral nutrition and other chronic dietary supplementation, and malabsorptive states including post Roux-en-Y Gastric Bypass (RYGB) surgery and other bariatric procedures. Symptoms of hypocupremia can include cytopenia, myeloneuropathy, hypopigmentation, hypercholesterolemia, thyroid dysfunction among others. Here, we describe a patient with an acquired copper deficiency that was incidentally found 3 years post RYGB surgery with symptoms of cytopenia and thyroid hormone instability.

Case Presentation: A 59 year old Caucasian woman with a history of RYGB surgery presented to an outpatient family medicine clinic for routine follow up for long-standing, uncontrolled hypothyroidism despite reported

adherence to taking Levothyroxine as prescribed. She was originally diagnosed with primary hypothyroidism in her 20s when she had a high TSH and a low T4. She presented with cold intolerance, dry skin, chronic fatigue, brittle hair, and cytopenia for several years. Physical exam revealed that her thyroid was not enlarged with an absence of masses or nodules but rather symmetric and nontender. Her hypocupremia was incidentally found while investigating the cause for her abnormal liver enzymes seen on CMP. Her serum ceruloplasmin was 15.7 mg/dL and her serum copper was 40 mcg/dL. Recent CBCs revealed chronic normocytic anemia and neutropenia, which is consistent with symptoms of hypocupremia. Differential diagnosis includes primary hypothyroidism exacerbated by hypocupremia along with primary hypothyroidism exacerbated by medication noncompliance.

**Working Diagnosis:** Given her reported adherence to Levothyroxine with adjustments of dosage in line with her TSH levels, the working diagnosis is uncontrolled primary hypothyroidism worsened by hypocupremia from her RYGB.

**Management:** The patient was referred to an endocrinologist and was sent to an infusion center for intravenous copper supplementation and will be monitored for future hematological and thyroid homeostasis.

## References

### Learning Objectives

- Learning Objectives: 1. Discuss the importance for copper in hematological and thyroid homeostasis.  
2. Discuss the relationship between RYGB and hypocupremia and how it may manifest in patients  
3. Recommend for greater awareness of hypocupremia in malabsorptive states.

## Abstract Reference Number: 58

Authors: Nupur Singh, BA

**Submission Type:** Unusual Case Presentation (a unique, rarely seen clinical scenario with discussion of a patient)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Poster Abstract Presentation

### Abstract Title: A Rare Case of Mycobacterium conceptionense infection in a Post-Renal Transplant Diabetic in the Southeastern United States

#### Abstract

Introduction:

With an increasing rate of non-tuberculous mycobacterial infections globally, there is a high demand for research on markers of diagnosis, knowledge from previous cases, and treatment options. Commonly found through contaminated water, soil, and animal products, mycobacterial infections can present with skin infections and can have severe pulmonary consequences, requiring months of antibiotic treatment. Under 30 cases have been reported of Mycobacterium conceptionense infection. Cases have been reported in France, Iran, and South Korea among other areas. In the United States, there have been three reported cases of M. conceptionense infection, all of which were in the midwestern Chicago, Illinois area. We report the first case of a M. conceptionense infection in the Southeastern part of the USA in Memphis, Tennessee. Additionally, to date, no prior cases have been reported after an organ transplant or in relation to diabetes requiring insulin. Case Presentation:

A 70-year-old African American woman with history of insulin-dependent diabetes and end-stage kidney disease status post cadaveric renal transplant 8 years prior, presented to clinic with a painful abdominal wall abscess which developed 3 weeks prior at the site of subcutaneous insulin injections. At the time of presentation, the lesion appeared as a fluctuant mass measuring 6cm with surrounding erythema, tender and warm to touch. The abscess was surgically drained and custard-like pus was encountered. The sample was sent for testing and returned positive on direct AFB smear and Mycobacterium conceptionense was suspected based on DNA probe analysis. The isolate was sent to National Jewish Mycobacteriology Reference Laboratory for official identification and

susceptibility testing where and rpoB gene sequence analysis and a line probe assay identification test were conducted. Results strongly supported Mycobacterium conceptionense, as other species were ruled out. Extensive in vitro antibiotic susceptibility guided antibiotic use alongside patient's other health conditions. Final Diagnosis: Abdominal abscess infection with Mycobacterium conceptionense. Management/Outcome: The final antibiotic regimen was doxycycline-100mg twice daily and Augmentin-250/125mg twice daily. This patient presents a unique, delicate case where proper treatment required management of several other medications, diagnoses, and co-morbidities.

### References

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Faria, S., Joao, I., & Jordao, L. (2015). General Overview on Nontuberculous Mycobacteria, Biofilms, and Human Infection. *Journal of Pathogens*, 2015, 1-10. doi:10.1155/2015/809014  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1448615/>

### Learning Objectives

Emphasize the rarity of Mycobacterium conceptionense infection in the United States and the first reported case in an insulin-requiring Type II Diabetic. Utilize national resources for microbiology testing in order to accurately identify uncommon bacterial species such as Mycobacterium conceptionense. Treat and improve the use and selection of proper antibiotic treatment regimens for a patient with several health conditions to ensure proper resolution of infection.

### Abstract Reference Number: 59

Authors: Patrick ryan, MS

Co-authors: Idaleen C Ching, BS, Medical Student, 2nd Year; Victoria K. Ierulli, MS, Research Assistant

**Submission Type:** Clinical Science Presentation (A well-defined basic or clinical research project)

**Submission Category:** Surgery & Surgical Specialties

**Presentation Type:** Oral Abstract Presentation (On-Site in Memphis ONLY - 10 minute presentation)

### Abstract Title: Factors Influencing Return to Play Following Medial Patellofemoral Ligament Reconstruction with and without Tibial Tubercle Osteotomy: A Systematic Review

#### Abstract

**Background:** Return to play after medial patellofemoral ligament reconstruction (MPFLR) or medial patellofemoral ligament reconstruction with tibial tubercle osteotomy (MPFLR/TTO) is traditionally guided by time from surgery, knee range of motion, and strength. It is unclear how dynamics such as sport played, psychological factors, and pre-operative risk factors may affect an athlete's ability to return to sport. This study focuses on the role of these factors in changing how quickly/effectively athletes can resume sports participation after MPFLR or MPFLR/TTO. **Methods:** A literature search was conducted, according to PRISMA guidelines, on PubMed, EMBASE, CINAHL, Web of Science, Scopus, and Cochrane Library. Studies were included if patients underwent MPFLR or MPFLR/TTO for patellar instability, return to play following surgery was measured, and if a factor that may change ability/time to return to sport was mentioned. Search terms included medial patellofemoral ligament, tibial tubercle osteotomy, tibial tubercle transfer, return to play, and return to sport. Data on return to sport, subjective knee scores, and factors affecting return to play was collected. **Results:** 452 studies were screened and 18 were included in this review. 83.1% (729/877) successfully returned to sport at a mean of 8.46 months post-operatively. Fear of re-injury or perceived non-improvement in their knee function was the reasoning of 27.2% (78/287) of patients that did not return to sport or returned at a lower level. Volleyball/handball, skiing, and soccer had a large decrease in participation following surgery (61.1%, 40%, and 28.6%, respectively). A positive apprehension test

post-operatively was associated with significantly lower return to sport rate (69.6% vs 95.4%,  $p=0.03$ ). Pre-operative trochlear dysplasia was associated with significantly lower post-operative subjective knee scores in several studies (Kujala [ $p=0.02, 0.0001$ ] and Lysholm [ $p=0.001$ ]). Conclusions: Fear of re-injury, type of sport played, post-operative positive apprehension test, and trochlear dysplasia have been documented as influential factors in return to sport following patellar stabilization surgery. The breadth of literature on this subject is poor and primarily made up of observational studies, future studies on the dynamics effecting return to sport following these procedures is crucial so physicians can best advise patients during their rehabilitation.

## References

### Learning Objectives

- To describe the percentage of athletes who return to play and how long it takes them to return to sport after MPFLR and MPFLR/TTO.
- To discuss the most significant factors effecting return to sport after MPFLR and MPFLR/TTO.
- To individualize rehabilitation for patients based on sport played, anatomical risk factors, and other demographic factors.

## Abstract Reference Number: 60

Authors: Melissa Hidalgo, MD

Co-authors: Tayeaba Tariq, MD, Internal Medicine, PGY2, Broward Health North, Deerfield Beach, FL; Hootan Vakildastjerd, MD, Internal Medicine PGY2, Broward Health North, Deerfield Beach, FL; Ayman Albittar, MD, Internal Medicine, PGY1, Broward Health North, Deerfield Beach, FL; Yordanka Reyna, MD, Medical Director, Department of Cardiology and Advanced Heart Failure, Broward Health Medical Center, Fort Lauderdale, FL; and Nemer Dabage-Forzoli, MD, Program Director, Internal Medicine, Broward Health North, Deerfield Beach, FL.

**Submission Type:** Case Presentation (A clinical scenario with discussion of a patient)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Poster Abstract Presentation

### Abstract Title: Troponinemia post AF ablation, expected side effect or perfect ACS storm?

#### Abstract

##### Introduction

Radiofrequency ablation for atrial arrhythmias can result in increased markers of inflammation and myocardial injury (1, 2, 5). Inflammation is a significant contributing factor to the higher pro-thrombotic state early after cardiac ablation (2). Patients undergoing catheter ablation for atrial fibrillation (AF) have increased risk of thromboembolic events 1.1%, especially in the first two weeks after the procedure (2, 3, 4). Here, we present a case of non-ST elevation myocardial infarction (NSTEMI) requiring cardiac stenting post ablation for AF.

##### Case Presentation

71-year-old male with medical history of hypertension, hyperlipidemia, tobacco use, aortic stenosis (AS), obesity, AF on Xarelto, status post cardiac ablation one day prior to admission, presented with the complain of orthopnea and non-radiating mid-epigastric tightness that started several hours after ablation, at night. Associated symptoms were nausea and lightheadedness. No prior similar episodes. Patient had a negative pharmacological stress test in 2021. Patient also had transthoracic echocardiogram, one month prior, which showed mild concentric left ventricular hypertrophy, moderate-severe AS, moderate left and right atrium dilation, ejection fraction (EF) >55% with no wall motion abnormalities. On admission, blood pressure 173/96 mmHg, other vital signs were unrevealing. Electrocardiogram showed sinus rhythm, rate 88, with premature atrial complexes, no acute ST-T wave changes. On physical examination, S1 and S2 present, regular rate and rhythm, upper left sternal border systolic murmur, bilateral lower lobe expiratory wheezing, no peripheral edema. Labs were significant for troponin level 5.78 nanog/mL, B-type natriuretic peptide 191 pg/mL, WBC 12.85, C-reactive protein 11.15 mg/dL. On

imaging, CT angiography showed cardiomegaly, trace pleural effusions and bilateral interstitial infiltrates. Repeat echocardiogram was unchanged from prior. Final/Working Diagnosis Newly diagnosed acute decompensated heart failure with preserved ejection fraction post cardiac ablation, and NSTEMI.

#### Management and Outcome

Patient received IV diuretics. Interventional cardiology was consulted and decision was made for cardiac catheterization on day 2 of hospitalization for further evaluation. On left cardiac catheterization, the right coronary artery had a focal high-grade 90% distal stenosis that was stented with a 2.25 x 15 mm drug-eluting stent. Troponin levels trended down. Patient clinically improved and was discharge on Xarelto and Plavix.

#### References

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#### Learning Objectives

1. Upon completion of this lecture, learners should be better prepared to identify and discuss pro-thrombotic markers after cardiac ablation.
2. Upon completion of this lecture, learners should be better prepared to implement the differential diagnosis of acute coronary syndromes in the setting of expected troponinemia post cardiac ablation.

#### Abstract Reference Number: 61

Authors: Dylan Wentzel, BS

Co-authors: Cooper Root, BS, MS2, University of Kansas School of Medicine, Kansas City, KS; Johnathan Dallman, BS, MS3, University of Kansas School of Medicine, Kansas City, KS; Kimberly Templeton, M.D. Program Director, Orthopedic Surgery, University of Kansas Medical Center.

**Submission Type:** Clinical Science Presentation (A well-defined basic or clinical research project)

**Submission Category:** Quality Health Care, Patient Safety & Best Practices

**Presentation Type:** Poster Abstract Presentation

#### Abstract Title: A Retrospective Analysis of Fractures in the Transgender Population

##### Abstract

Background/Knowledge Gap: The size of the transgender community is increasing exponentially as it is becoming more recognized and accepted in the United States, as well as around the globe. There currently is a paucity of literature regarding the risks long-term hormone replacement therapy (HRT) presents in this population, especially in bone health. Fully understanding the risks and benefits of HRT in the transgender population is essential to determine the impact of this treatment on transgender bone health and fracture risk. The objective of this study was to characterize the prevalence, anatomical locations, and characteristics of fractures in the transgender population undergoing HRT relative to the general population at a single institution. This project also sought to better describe comorbidities experienced by the transgender population and other factors that could affect fracture risk in this population. Methods/Design: A retrospective analysis of fractures at a single institution from

01/01/2020 to 01/01/2021 was performed. The HERON system was used to collect data on all fractures in the population. Chart review was utilized to identify all transgender individuals undergoing HRT. The prevalence, anatomical location, and characteristics of the fractures in this cohort were then compared to fracture characteristics in the general population. Comorbidities of the populations and medical management with Dual-Energy X-ray Absorptiometry (DXA) scans were also recorded. Results/Findings: The prevalence, anatomical locations, and characteristics of fractures in the transgender population highly paralleled that of the general population. It was noted that transgender individuals experienced a high percentage of upper arm and shoulder fractures, and a lower percentage of lumbar vertebral fractures. The rate of depression was higher in the transgender population relative to the general population. No patients in the transgender population had been diagnosed with osteoporosis, but only one received a DXA scan.

Conclusion/Implications: Overall, it can be concluded that fracture location and characteristics do not seem to be altered in the transgender population. An emphasis needs to be placed on the importance of adequate charting for gender identity disorders and proper medical management with DXA scans in patients undergoing HRT. Additionally, future research should be focused on prospective studies to continue to elucidate fracture risk, as well as the effects of HRT on bone health in the transgender population.

### References

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### Learning Objectives

Upon completion of this lecture, learners should be better prepared to describe the characteristics of fracture in the transgender population studied and better prepared to describe the need for more adequate charting of gender identity disorders.

### Abstract Reference Number: 62

Authors: Kristin Chancellor, BS, ms

Co-authors: David A. Patch, MD, Orthopedic Surgery, PGY1, UAB, Birmingham, AL; Alexander K. Mihas, BS, Research Fellow, UAB, Birmingham, AL; Logan A. Reed, BS, Research Fellow, UAB, Birmingham, AL; Wesley R. Stroud, MD, Orthopedic Surgery, UAB, Birmingham, AL; Clay A. Spitler, MD, Orthopedic Surgery, UAB, Birmingham, AL; Jonathan H. Quade, MD, Section Chief of Orthopedic Trauma Surgery, UAB, Birmingham, AL

**Submission Type:** Clinical Science Presentation (A well-defined basic or clinical research project)

**Submission Category:** Surgery & Surgical Specialties

**Presentation Type:** Poster Abstract Presentation

### Abstract Title: Bone Marrow Aspirate with Allograft Cancellous Chips versus Autologous ICBG or RIA in the Treatment of Long Bone Nonunions

#### Abstract

Background: The use of bone grafting in cases of nonunion is predicated on promoting bone healing through osteoconductive, osteoinductive, and/or osteogenic effects.(1) Despite the advantages of autologous iliac crest bone grafting (ICBG), donor-site morbidity remains a significant concern.(2) As a result, alternative bone grafting methods have gained popularity.(4) Objective: To assess union rates between bone marrow aspirate with allograft

cancellous chips (BMA-ACC) compared to autologous iliac crest bone grafting (ICBG) and the reamer-irrigator-aspirator (RIA) system in the treatment of long bone nonunion. We hypothesized that the combination of BMA-ACC would have higher union rates with less complications.

Design: Retrospective cohort study. Setting: Academic Level 1 trauma center. Participants: Patients 18 and older who underwent primary bone grafting technique using BMA-ACC, autologous ICBG, or RIA for the treatment of long bone nonunion. Main outcomes: The primary outcome of interest was union. Secondary outcomes of interest were acute donor site complications, operative time, length of stay, rate of transfusion, and unplanned reoperations. Results: A total of 112 patients were included in the study, with 27 patients in the BMA-ACC group, 43 patients in the autologous ICBG group, and 42 patients in the RIA group. BMA-ACC, autologous ICBG group, and RIA groups did not differ significantly between rates of union (88.9% vs 72.1% vs 83.3%,  $p=0.18$ ). The autologous ICBG group was most associated with acute donor site complications (19.0%) compared to the BMA-ACC and RIA groups (0.0% vs 4.8%,  $p=0.01$ ). Average operative time was shorter in the BMA-ACC group compared to the autologous ICBG and RIA groups ( $146.1 \pm 54.8$  vs.  $173.1 \pm 88.6$  and  $178.9 \pm 88.6$  minutes), but this difference was not significant ( $P=0.23$ ). Overall, there were no significant differences in operative time, length of stay, rate of transfusion, or unplanned re-operations among the groups. Conclusion: In the present study, primary treatment of long bone nonunion with BMA-ACC had comparable union and complication rates to bone grafting performed with autologous ICBG or RIA. Given the well-established complications associated with traditional autograft harvest, BMA-ACC may offer a less morbid alternative.

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## Learning Objectives

1. To review two alternative methods of bone grafting and how they compare to the gold standard autologous iliac crest bone grafting
2. To analyze factors that put patients at risk for nonunion
3. To review the cellular makeup of the 3 types of bone grafting presented in this paper

## Abstract Reference Number: 63

Authors: Josh Matthews, MBBS

Co-Authors: Joel Matthews, MBBS BSc, FY2, NHS Tayside, Dundee, Scotland, United Kingdom  
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**Submission Type:** Unusual Case Presentation (a unique, rarely seen clinical scenario with discussion of a patient)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Poster Abstract Presentation

**Abstract Title: Concurrent Chemoradiation: An Alternate Effective Treatment for Advanced Basal Cell Carcinoma**

## Abstract

INTRODUCTION



We report a 60-year-old female with a 30 year history of tanning bed usage presenting with a quarter sized area on the left shoulder which rapidly progressed. Biopsy confirmed nodular type basal cell carcinoma (BCC). CASE PRESENTATION

The lesion was determined to be too large for excision and the patient was referred to oncology. The patient was initially treated and responsive to 2 lines of hedgehog inhibitor treatment. However treatment was stalled due to hospitalization of patient with COVID-19 and the BCC progressed further. An additional line of hedgehog inhibitor therapy was attempted, despite which the BCC progressed.

#### MANAGEMENT

Treatment was transitioned to concurrent radiotherapy and chemotherapy with cisplatin, based on an extrapolation from treatment of head and neck squamous cell carcinoma. The patient responded well to concurrent therapy and after 5 cycles the lesion showed significant healing. Further follow-up at 8 weeks showed marked resolution with minimal erythema and scarring. OUTCOME

This case highlights the effective use of concurrent chemoradiation in the treatment of basal cell carcinoma which has progressed despite 2 lines of hedgehog pathway inhibitor treatment. Though literature is limited, in view of the excellent outcome achieved with chemoradiation, more research may be warranted to explore this modality of treatment.

#### References

#### Learning Objectives

1. Identify the use of chemoradiation as an effective treatment for advanced basal cell carcinoma.

#### Abstract Reference Number: 64

Authors: Alexa Lauinger, BS

Co-Authors: Alexa Lauinger, MS1, Carle Illinois College of Medicine, University of Illinois at Urbana-Champaign, Urbana, IL; Libak Abou, MPT PhD, Department of Physical Medicine & Rehabilitation-Michigan Medicine, University of Michigan, Ann Arbor, MI; Maximillian Mayr, OMS4, Kansas City University College of Osteopathic Medicine, Joplin, MO; Joseph Peters, PhD, The Beckman Institute for Advanced Science and Technology, University of Illinois at Urbana-Champaign, Urbana, IL

**Submission Type:** Work in Progress (Any type of project or idea that is in process which does not have established results. Student/resident applicant(s) must be actively involved in the development of the idea, and/or the planning and execution of the project)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Poster Abstract Presentation

#### Abstract Title: Neurocognitive Disorders and Using Motor Cognitive Dual-Task Testing to Predict Future Falls: Study Protocol for a Systematic Review

#### Abstract

Background/Knowledge Gap: Falls are associated with increased injury, healthcare costs, and mortality risk[1-3]. As individuals with neurocognitive deficits represent a high-risk population for experiencing falls, an accurate fall risk screening tool may be helpful for preventing future falls in this population[4,5]. Unfortunately, accurate and evidence-based fall screening tools are limited[6]. Dual-task testing, which measures balance and gait while a patient simultaneously performs a cognitive task, has been suggested as a way to quantify fall risk in individuals with neurocognitive disorders[7,8]. However, its clinical utility has not become widespread due to inconsistencies in correlating fall incidents to dual-task performance[9]. Objective: To examine the fall prediction ability of dual-task assessments in people with neurocognitive disorders.

Methods/Design: This systematic review will follow PRISMA guidelines in accordance with the Cochrane Handbook. PubMed, Embase, Web of Science, Scopus, CINHAL, SPORTDiscuss, and PsycINFO databases will be

queried for papers examining dual-task assessments in populations with neurocognitive disorders (i.e., stroke, Parkinson's, spinal cord injury, cerebral palsy, Huntington's, traumatic brain injury, and Alzheimer's) and fall incidence. Multiple sclerosis will not be examined because it has been recently researched by the current research team[10]. Independent reviewers will filter studies to include research examining dual-task assessments with prospective fall reports of at least 3 months. Reviews, protocols, cross-sectional studies, pilot studies, retrospective studies, and case reports will be excluded. Reviewers will complete a quality assessment for each included study[11].

**Expected Results:** Dual-task walking velocity and cognitive impairment will discriminate between recurrent (>2 falls) and infrequent (0-1 fall) fallers. Dual-task testing will be sensitive, specific and accurate to predict future falls in neurocognitive disorders.

**Discussion:** Effects of neurocognitive disorders on fall risk[4], correlation between falls and mortality[3], and inconsistencies of evidence in predicting falls based on dual-task assessments warrant this systematic review[7,8]. This review should establish whether dual-task assessments can accurately inform physicians of fall risk in patients with neurocognitive deficits. The review will be important to identify individuals with neurocognitive disorders at high risk of falls and refer them to appropriate fall prevention program. The findings will help improve fall prevention research.

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## Learning Objectives

Learners should be prepared to design and implement systematic reviews that analyze the clinical relevance of interventions and screening tools for improving the quality of life of people with neurocognitive disorders.

## **Abstract Reference Number: 65**

Authors: Udit Dave, B.S.

Co-authors: Udit Dave, BS, Medical Student, MS3, Tulane University School of Medicine, New Orleans, LA; Emma Lewis, MS, Medical Student, MS3, Tulane University School of Medicine, New Orleans, LA; Victoria K. Ierulli, MS, Research Assistant, Department of Orthopaedics, Tulane University School of Medicine, New Orleans, LA; Mary K. Mulcahey, MD, Assistant Program Director, Department of Orthopaedics, Tulane University School of Medicine, New Orleans, LA.

**Submission Type:** Clinical Science Presentation (A well-defined basic or clinical research project)

**Submission Category:** Surgery & Surgical Specialties

**Presentation Type:** Oral Abstract Presentation (On-Site in Memphis ONLY - 10 minute presentation)

### **Abstract Title: Deep Vein Thrombosis Prophylaxis in Patients who Undergo Knee Arthroscopy**

#### **Abstract**

**Background:** Knee arthroscopy is a common procedure utilized by orthopaedic surgeons to repair ligaments. A common associated complication is deep vein thrombosis (DVT) which can be life threatening. DVT prophylaxis can be performed with medications including aspirin, anticoagulants, and factor Xa inhibitors. However, a standardized guideline of DVT prophylaxis in the knee arthroscopy setting does not exist. The primary aims of this systemic review are to summarize how DVT prophylaxis is employed for patients who undergo knee arthroscopy and to provide a universal suggestion for DVT prophylaxis in the setting of knee arthroscopy.

**Methods:** A systematic literature review performed according to Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines was performed through PubMed, Embase, and Cochrane Library for studies published after 1998. Included studies evaluated males and females of any age group who underwent knee arthroscopy procedures, were prospective randomized controlled trials, and evaluated DVT prophylaxis regimens in patients undergoing knee arthroscopy. Studies that were not written in English, analyzed animals or cadavers, were not RCTs, did not directly evaluate patients undergoing knee arthroscopy, or did not study DVT prophylaxis were excluded.

**Results:** The initial search generated 300 studies, and 15 studies were ultimately included. DVT prophylaxis methodologies included compression stockings, aspirin, factor Xa inhibitors, low molecular weight heparin, and neuromuscular electrical stimulation. Overall, 7 of 15 (47%) studies supported DVT prophylaxis in all patients, 3 (20%) studies supported it for high-risk patients, and 5 (33%) studies did not support any DVT prophylaxis.

**Conclusions:** A large proportion of RCTs utilizing primary data advocate for DVT prophylaxis in all (7 of 15) or a high-risk subset (3 of 15) of patients. Only 5 of 15 studies suggested that no DVT prophylaxis is needed after knee arthroscopy, and many cited low incidence of post-arthroscopy DVT as the driving force in decision making. Patients undergoing knee arthroscopy are at an increased risk for deep vein thrombosis. Factor Xa inhibitors and low molecular weight heparin drugs are safe and effective options for orthopaedic surgeons to perform DVT prophylaxis in knee arthroscopy patients, especially in patients who are at increased risk for post-operative DVT.

#### **References**

#### **Learning Objectives**

- Understand that most RCTs endorse utilizing some form of DVT prophylaxis in knee arthroscopy patients.
- Summarize reasons for not employing DVT prophylaxis in some cases
- Identify specific DVT prophylaxis needs in high-risk patients

## **Abstract Reference Number: 66**

Authors: Daga Olsen, MD

Co-authors: Daga Olsen, MD, Internal Medicine, PGY2, MRHC, Corinth, MS; Victor Camba, DO, Internal Medicine, PGY2, MRHC, Corinth, MS; Andrea Sparkman, BS, Medical Student, OMS3, MRHC, Corinth, MS; Shaylin Marvell, MD, Emergency Medicine, PGY1, MRHC, Corinth, MS; Chris Tucker, MD, Associate Professor of Internal Medicine, MRHC, Corinth, MS

**Submission Type:** Unusual Case Presentation (a unique, rarely seen clinical scenario with discussion of a patient)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Poster Abstract Presentation

### **Abstract Title: Choledocholithiasis Found Four Decades Post Cholecystectomy**

#### **Abstract**

Cholelithiasis occurs when stones within the gallbladder are present. Choledocholithiasis is when a stone is specifically lodged into the common bile duct (CBD). This can result in an obstruction which decreases flow of bile into the duodenum. If stones are symptomatic, a cholecystectomy is performed. In the modern era, cholecystectomy is performed laparoscopically with clips placed on the cystic duct and cystic artery. The gallbladder is extracted with the help of cauterization. However, before laparoscopic technology was available, open cholecystectomies were performed. Open cholecystectomies were the standard of treatment until 1991. So it is more likely that this patient underwent an open cholecystectomy. A complication of cholecystectomy is postcholecystectomy syndrome, which is defined as heterogeneous symptoms that persist or recur despite cholecystectomy. A 88 year old female presents with nausea, vomiting, weakness and altered mental status. On exam she had right upper quadrant (RUQ) tenderness. History was significant for cholecystectomy in the 1980s and pancreatitis requiring an ERCP and stent in 2004. Since then she denies significant issues pertaining to her surgical history. CXR revealed a metal clip from cholecystectomy. RUQ ultrasound was performed and revealed common bile duct dilation and possible obstruction from stone, but absent gallbladder. Magnetic resonance cholangiopancreatography (MRCP) was performed and revealed a filling defect and dilation of 17mm within the distal common bile duct indicating a common bile duct stone. Patient needs to undergo possible intervention to prevent potential cholangitis. Patient was transferred for further testing and possible treatment with endoscopic retrograde cholangiopancreatography (ERCP).

This case has an unusually delayed presentation of choledocholithiasis status post cholecystectomy. Although extremely rare, a CBD stone found, even forty years after cholecystectomy, is a potential cause of late postcholecystectomy syndrome. The extremely late onset of symptoms make this case unique.

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<https://doi.org/10.1155/2020/3265010>

Laparoscopic Remnant Cholecystectomy and Transcystic Common Bile Duct Exploration for Gallbladder/Cystic Duct Remnant with Stones and Choledocholithiasis After Cholecystectomy

Zhu, Jie-gao and Zhang, Zhong-tao. "Laparoscopic Remnant Cholecystectomy and Transcystic Common Bile Duct Exploration for Gallbladder/Cystic Duct Remnant with Stones and Choledocholithiasis After Cholecystectomy,"

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### Learning Objectives

Upon completion of this lecture, learners should be better prepared to diagnose and manage Choledocholithiasis

### Abstract Reference Number: 67

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**Submission Type:** Unusual Case Presentation (a unique, rarely seen clinical scenario with discussion of a patient)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Poster Abstract Presentation

**Abstract Title: GBS Induced Cauda Equina Syndrome In The Setting of DKA.**

### Abstract

Introduction: Group B streptococcal (GBS) spinal epidural abscesses are rarely reported. This most commonly occurs through hematogenous spread. The most common microbe causing a spinal epidural abscess is *Staphylococcus aureus*. Abscesses in the spine can compress the spinal cord and cause irreversible damage if not treated promptly. To increase awareness, we report a case of a 36-year-old female with a GBS spinal epidural abscess and describe its clinical course, disease features, and treatment. Case description: 36-year-old female with PMH of IDDM, bipolar disorder, schizoaffective disorder, and polysubstance use disorder. Presented to the ED with chief complaints of back and bilateral leg pain. Patient had similar presenting symptoms at a previous admission but decided to leave AMA prior to further evaluation. On current admission, patient was admitted to the ICU with concerns of DKA. Patient was found to be meeting SIRS criteria; however, no source of infection was identified. Patient was also found to be experiencing urinary retention. A thorough history revealed that patient had a history of IV drug use with needle sharing. Blood cultures returned positive for GBS. A TTE revealed an LVEF of 51% with mild mitral regurgitation, however no evidence of vegetation. Given patient's presentation of lower back pain and point tenderness along patient's thoracic spine, pan-imaging of patient's spine was ordered to rule out osteomyelitis. MRI revealed Osteomyelitis at L5-S1 but also a multiloculated abscess of the right paraspinal muscles spanning from L3 through the mid-sacral region. An ascending epidural abscess was noted dorsally extending into the cervical spine region, extending from the thoracic spine to the C2 spinous process. This was causing displacement of the cord and dura ventrally and flattening of the cord causing severe spinal canal narrowing. Patient required emergent evaluation by neurosurgery. Conclusion: With the prevalence of back pain in the United States, it is essential to have proper and broad initial differentials of rare presentations so that diseases can be properly identified and promptly addressed. Diagnosing spinal epidural abscesses is rare and fatal if not treated early, so identification is vital to reducing mortality and future neurological deficits.

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### Learning Objectives

Upon completion of this lecture, learners should be better prepared to diagnose cauda equina syndrome and properly identify the syndrome as a medical emergency.

### Abstract Reference Number: 68

Authors: Victor Camba D.O, M.Ed, M.S

Co-authors: Victor Camba, DO, Internal Medicine, PGY2, MRHC, Corinth, MS; Carlos Pfeiffer, DO, Internal Medicine, PGY1, MRHC, Corinth, MS; Andrea Sparkman, BS, Medical Student, OMS3, MRHC, Corinth, MS; Talhah Siraj, MS, Cardiology, PGY4, MRHC, Corinth, MS; Paul Volansky, DO, Associate Program Director, Cardiology, MRHC, Corinth, MS

**Submission Type:** Unusual Case Presentation (a unique, rarely seen clinical scenario with discussion of a patient)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Poster Abstract Presentation

### Abstract Title: A Mare Accident Resulting in a Traumatic Ventral Septal Defect

#### Abstract

Traumatic ventricular septal defect (VSD) secondary to blunt chest injury is a rare occurrence. Etiology of traumatic VSD has previously been investigated and has been narrowed down to two unique mechanisms. One mechanism is a posttraumatic myocardial infarction leading to weakened septal tissue resulting in decreased wall integrity and elasticity after the traumatic impact. Another possible pathogenesis is the compression of the spine against the sternum during blunt impact. This causes an increase in pressure on the septal wall resulting in an acute rupture. Most case reports with traumatic VSDs present acutely in addition to other traumatic injuries. In this case there is an unusual subacute presentation.

A 74 year old man presented to an outpatient clinic with complaints of progressive dyspnea. He was no longer able to ambulate due to the severity of the dyspnea. History revealed a strike to the chest by a horse two weeks ago. On physical exam, a holosystolic murmur was auscultated both anteriorly and posteriorly. Oxygen saturation on room air was 98% at rest, but 81% with exertion. An outpatient EKG showed sinus tachycardia with premature ventricular contractions but otherwise normal. An outpatient echocardiogram showed VSD in the area of the septal thinning with a serpiginous course starting in the apical region and terminating in the mid segment of the

VSD. The left ventricular ejection fraction appeared to be normal, possibly hyperdynamic. The right ventricle size and function appear to be normal. A severe tricuspid regurgitation was noted. Patient was placed on the cardiology service and underwent coronary angiography with right heart catheterization. This revealed non-obstructive coronary artery disease with no prior infarction. Cardiothoracic surgery was consulted and recommended a percutaneous repair. The VSD was determined to be a result of the acute traumatic injury to the chest. This case demonstrates the potential for a delayed onset of symptoms. Due to the lack of extracardiac manifestations, no urgent treatment was sought. This led to the unique subacute presentation of an isolated traumatic VSD.

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### Learning Objectives

Upon completion of this lecture, learners should be better prepared to diagnose a VSD.

### Abstract Reference Number: 69

Authors: Victor Camba, D.O, M.Ed, M.S

Co-authors: Victor Camba, DO, Internal Medicine, PGY2, MRHC, Corinth, MS; Erin Nichols, DO, Internal Medicine, PGY2, MRHC, Corinth, MS; Michael Coty Maddox, DO, Internal Medicine, PGY1, MRHC, Corinth, MS; Besseri Ako, MD, Internal Medicine, PGY3, MRHC, Corinth, MS; Kyle Ulrich, DO, Associate Professor of Internal Medicine, MRHC, Corinth, MS

**Submission Type:** Unusual Case Presentation (a unique, rarely seen clinical scenario with discussion of a patient)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Poster Abstract Presentation

### Abstract Title: A Case Report of Catfish Induced Bacteremia

#### Abstract

Introduction: *Edwardsiella tarda* (*E. tarda*) is a member of the Enterobacteriaceae family and has recently become recognized as pathogenic, particularly in patients with an underlying illness. Main infections associated with this species include bacterial gastroenteritis, wound infections such as cellulitis or gas gangrene associated with trauma to mucosal surfaces, and systemic diseases such as septicemia, meningitis, cholecystitis, and osteomyelitis. Case description: In this case, the Patient is a 60-year-old African-American male with a past medical history of alcohol abuse and daily smoker presented to the ED with a chief complaint of right upper extremity swelling for the past two days. Patient reports that he was fishing, and got stung between his index finger and middle finger on his right hand by a catfish. Patient reports that it was painful initially, then it became more painful and swollen until he came into the ED. Patient was difficult to understand as he was lethargic; however, he stated that he felt well besides his swollen arm. Upon arrival to the Emergency Department, he was lethargic, coded, and expired within hours of admission. Patient blood cultures came back positive for *E. tarda*.

Conclusion: This case report illustrates the importance of a systematic approach to a patient presenting with a relatively unknown past medical history along with an unusual strain of bacteria. The Evaluation and management of suspected sepsis and septic shock are critical in reducing mortality.

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## Learning Objectives

Upon completion of this lecture, learners should be better prepared to utilize a systematic approach when a patient presents with septic shock with an unknown past medical history.

## Abstract Reference Number: 70

Authors: Victor Camba D.O, M.Ed, M.S

Co-authors: Victor Camba, DO, Internal Medicine, PGY2, MRHC, Corinth, MS; Julia Rockcole, BS, Medical Student, OMS3, MRHC, Corinth, MS; Aziz Tabash MD, Internal Medicine, PGY3, MRHC, Corinth, MS; Justin Scobey, MD, Internal Medicine, PGY1, MRHC, Corinth, MS; Brian Chase Bennett, DO, Internal Medicine, PGY3, MRHC, Corinth, MS; Mary Avery Poole, DO, Internal Medicine, Associate Professor of Internal Medicine, MRHC, Corinth, MS.

**Submission Type:** Unusual Case Presentation (a unique, rarely seen clinical scenario with discussion of a patient)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Poster Abstract Presentation

## Abstract Title: Unusual presentation of neurosyphilis.

### Abstract

Introduction: Syphilis is caused by the spirochaete *Treponema pallidum*. Syphilis can lead to serious medical complications and permanent damage to the nervous system. On acquisition of the spirochete, clinical manifestation is localized on the skin as a lesion known as a chancre. The chancre will spontaneously resolve within 3 to 6 weeks even in the absence of treatment. Meningovascular syphilis seen in neurosyphilis can cause hydrocephalus as well as arteritis of the various-sized vessels leading to ischemia or infarction. The presentation of genitalia lesions in the setting of neurosyphilis is uncommon.

Case description: We report an unusual presentation of neurosyphilis in a 63-year-old male with a PMH of CVA and cerebral aneurysm. initial presentation was concerning of CVA/TIA. The patient reported that they experienced a fall approximately 24 hours prior, and they were unable to move their left side. The patient did report a previous stroke in the past which was found to be secondary to his cerebral aneurysm which was coiled approximately 21 years prior. CT head revealed a large embolized coil mass found within the basal artery. An age-indeterminate



bilateral lacunar infarct involving the thalami, and right occipital infarct was noted and was favored as a chronic insult. MRI was contraindicated as coils were unknown to be MRI-compatible. On physical examination genital lesions were found on the shaft of the penis, glans, scrotum, and thigh tracking to the rectum. The patient tested negative for HSV, chlamydia, HIV, and gonorrhea. RPR was reactive and titers are greater than 1:256. FTA-ABS was reactive and a lumbar puncture revealed reactive CSF VDRL and the CSF meningitis panel was negative. At that time patient was started on the appropriate IV therapy for neurosyphilis.

Conclusion: The concomitant presentation of clinical signs of both primary syphilis and neurosyphilis is unusual and could have been easily overlooked if a thorough physical examination was not fully conducted. Even with a thorough physical examination consideration to evaluate the patient for neurosyphilis was contested at first as the presentation of neurosyphilis is typically not accompanied by genital lesions.

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8. Algorithm for diagnosis of neurosyphilis in a patient without HIV infection. Courtesy of Christina M Marra, MD. Graphic 57300 Version 9.0. 2022 UPTODATE.

## Learning Objectives

Upon completion of this lecture, learners should be better prepared to decipher the differences between the different stages of Syphilis.

## Abstract Reference Number: 71

Authors: Kristin Chancellor, BS, MS

Co-Authors:

**Submission Type:** Unusual Case Presentation (a unique, rarely seen clinical scenario with discussion of a patient)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Poster Abstract Presentation

## Abstract Title: Rare Presentation of Myasthenia Gravis: a case study

### Abstract

Introduction:

Atypical cases of myasthenia gravis account for around 5% of cases and can put the patient at risk for treatment delay. Occurring in approximately 95% of cases, the most common initial presentation is oculo-bulbar fatigable weakness, but patients can present with broad complaints of weakness in various locations involving axial or extremity muscle groups. Antibody levels are used for diagnosis and monitoring treatment response. Mainstay of treatment involves acetylcholinesterase inhibitors and immunotherapy such as glucocorticoids or other immune modulators, such as azathioprine and cyclosporine.

### Case Presentation:

A 56-year-old male presented to a community neurology clinic with a complaint of 6 months of progressive bilateral distal upper extremity weakness. He endorsed decreased ability to complete activities of daily living including inability to grip items or button his shirts. He denied any lower extremity or ocular-bulbar symptoms. No pertinent family history was reported. On exam, the patient had a normal gait pattern. All cranial nerves were grossly intact. His bilateral upper extremities showed profound weakness with wrist flexion and extension with wasted appearance of interosseous muscles and finger drop. Initial lab tests including CBC, CMP, vitamin B12, and vitamin D levels were within normal limits. EMG showed no acute denervation. CSF fluid was noncontributory. Chest imaging was negative for thymoma. At the patient's follow-up visit, further investigation revealed he had visited a specialty eye clinic 5 months prior for diplopia and headache. Records from that visit noted normal upper extremity strength exam and negative acetylcholine modulating antibodies. Repeat titers showed ACHR binding antibody level of 0.48 nmol/L and ACHR blocking antibody level of 31 nmol/L.

### Management/Outcome:

Patient was treated with IVIG 2 grams per kilogram for 2 consecutive days, then once per month for a duration of 3 months. He was then started on azathioprine 50 mg twice daily with continuation of IVIG once per month for a total of 6 months duration. At 3 month follow up, he was able to button his shirts, finger drop was improved, and strength had increased in bilateral distal upper extremities.

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### Learning Objectives

1. Describe a diagnostic approach for fatigable muscle weakness
2. Review the importance of detailed history taking
3. Discuss the treatment strategy for myasthenia gravis

### Abstract Reference Number: 72

Authors: Marc Gebara, MS

Co-authors: Marc Gebara, M.S., 2nd Year Medical Student, Tulane School of Medicine, New Orleans, LA; Maxwell Green, M.P.H., 3rd Year Medical Student, Tulane School of Medicine, New Orleans, LA; Howard Maibach, M.D., Associate Professor of Dermatology, University of California San Francisco Medical School, San Francisco, CA

**Submission Type:** Work in Progress (Any type of project or idea that is in process which does not have established results. Student/resident applicant(s) must be actively involved in the development of the idea, and/or the planning and execution of the project)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Poster Abstract Presentation

**Abstract Title: A Systematic Review of Sunscreen Decontamination in Humans**

**Abstract**

Applying sunscreen prior to outdoor daytime activities has been shown to prevent skin damage by protecting against UV radiation damage. Unfortunately, it has been shown that a wide variety of sunscreen active ingredients accumulate beyond the FDA's .5 ng/ml limit within human plasma. Given that the long-term health consequences of their accumulation remains to be fully understood, it is important for physicians to understand what methods exist to rid the human body of these chemicals. We plan to perform a systematic review using PubMed, Web of Science and Embase following PRISMA guidelines using the search terms "sunscreen" and "removal or decontamination or decontaminant or skin decontamination". All experimental articles in human models that research the efficacy of decontamination methods to remove sunscreen active ingredients from the skin will be included. Results will be presented in a table in column versus row format demonstrating active ingredient versus method of decontamination. There exists at least six active ingredients (avobenzone, oxybenzone, octocrylene, homosalate, octisalate, and octinoxate) which may persist in human plasma and potentially multiple methods of decontamination. Our hope is that the results gathered from this study will provide investigators and clinicians with a better understanding of how to most effectively decontaminate the skin from these active ingredients and under what conditions this decontamination may be clinically appropriate

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**Learning Objectives**

- Demonstrate knowledge with effective methods in skin decontamination of sunscreen active ingredients
- Compare and contrast the percutaneous absorption and acquired plasma levels across six common sunscreen active ingredients

**Abstract Reference Number: 73**

Authors: Dylan Wentzel, BS

**Submission Type:** Clinical Science Presentation (A well-defined basic or clinical research project)

**Submission Category:** Surgery & Surgical Specialties

**Presentation Type:** Poster Abstract Presentation

**Abstract Title: Is the Use of a Postoperative Hip Orthosis Beneficial Following Routine Arthroscopy of the Hip? A Retrospective Cohort Study**

**Abstract**

Background/Knowledge Gap: Treatment of intra- and extra-articular pathologies of the hip via arthroscopy continues to gain popularity. To date, the impact of the routine use of postoperative hip bracing on patient reported outcome measures (PROMs) and re-operation rate has not been elucidated. The purpose of this study is to determine if there is a difference in PROMs and re-operation rate for patients who were braced versus those who were not braced following routine hip arthroscopy. Methods/Design: This was a retrospective review of 194 patients who underwent hip arthroscopy from 2018 to 2021 by two orthopedic surgeons at a single institution.

Patients prior to July 1, 2019 were immobilized in a hip orthosis following hip arthroscopy whereas those after July 1, 2019 were not. Baseline patient reported outcomes in the form of visual analog pain scale (VAS), modified Harris Hip Score (mHHS), single assessment numeric evaluation (SANE) hip scores, VR-12 physical score, VR-12 mental score were obtained for all patients in both cohorts and postoperatively repeated at two weeks, four weeks, three months, six months, one year, and two years. Additionally, results were stratified by gender to assess gender-based difference. The groups were then compared to evaluate for a difference in PROMs and reoperation rates over time. Statistical significance was set at  $p < 0.05$  for all analyses.

**Results/Findings:** We found no significant differences in VAS, mHHS, SANE, VR-12 Physical and VR-12 Mental between the two groups at any time point. There was no significant difference in reoperation rate for the braced vs the non-braced cohort ( $p = .208$ ). Demographics were not significantly different regarding gender distribution ( $p = 0.418$ ) and age ( $p = 0.087$ ) between groups.

**Conclusions/Implications:** The findings above suggest the use of an orthosis after routine hip arthroscopy does not improve patient reported outcomes or negatively impact the reoperation rate. Postoperative bracing increases perioperative cost and by foregoing routine bracing, patients may avoid associated morbidity that can come with wearing a brace for a prolonged period of time.

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## Learning Objectives

Upon completion of this lecture, learners should be better prepared to describe the lack of benefit that a Hip Orthosis provides following arthroscopy and better prepared to manage their own future patients postoperatively following hip arthroscopy.

## Abstract Reference Number: 74

Authors: Kristina Menchaca MD

Coauthors: Catherine Ostos Perez, Internal Medicine, PGY3, University of Miami, Florida; Nemanja Draguljevic, MD, Internal Medicine, University of Belgrade, Serbia; Shaun Isaac, MD, University of Miami/JFK Hospital

**Submission Type:** Case Presentation (A clinical scenario with discussion of a patient)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Poster Abstract Presentation

## Abstract Title: THE RARITY AND MANAGEMENT CHALLENGES OF LEFT VENTRICULAR THROMBUS AFTER NON-STEMI

### Abstract

Introduction:

Acute myocardial infarction (MI) and non-ischemic cardiomyopathy may lead to the occurrence of left ventricular thrombus (LVT). The incidence of LVT is decreasing due to early reperfusion techniques. The more extensive the myocardial injury is, the higher the risk of developing LVT. Furthermore, patients with STEMI are more likely to have LVT (43%) compared to non-STEMI patients (5%). We report a rare case of LVT after non-STEMI.

Case presentation:

A 71-year-old female with a medical history of hypertension presented to the emergency department with typical chest pain. Vitals signs included regular tachycardia of 108 beats/minute, blood pressure of 140/60 mmHg,

respiratory rate of 18 breaths/minute, and oxygen saturation of 97% on room air. Physical exam revealed regular rate and rhythm without murmurs, gallops, and rubs. Jugular venous distention was not observed. An electrocardiogram showed ST depressions in the lateral leads. Troponin I was 2.1(positive > 0.1ng/ml). Transthoracic Echocardiogram (TEE) demonstrated apical hypokinesis and a large mobile irregular mass on the septal wall highly suspicious for left ventricular thrombus. A Transesophageal Echocardiogram demonstrated apical thrombus, diffuse hypokinesis, and an estimated ejection fraction of 35%. A new diagnosis of LVT related to non-STEMI was made. Systemic anticoagulation was initiated, followed by weight-based enoxaparin to achieve the goal of an international normalized ratio of 2.0 to 3.0 The patient was discharged with a scheduled outpatient follow-up to assess the elimination of LVT.

#### Discussion:

Myocardial infarction can lead to a unbalance of Virchow's triad factors due to reduced ventricular motion, local myocardial injury, and hypercoagulability. Transthoracic and transesophageal echocardiograms have high specificity but low sensitivity in detecting LVT, however, cardiac magnetic resonance has the highest diagnostic accuracy. Current guidelines suggest management with vitamin K antagonist (VKA) for 3 to 6 months and are initially coadministered with parenteral anticoagulation due to its prothrombotic effect. However, the high risk of the embolic event remains after the resolution of LVT and potentially may lead to stroke, other cardiovascular events, and death. Direct oral anticoagulants can potentially be a safe and efficient alternative to VKA. However, there are no randomized controlled trials to confirm this.

Conclusion: LVT is a rare condition in reperfusion era. Although not expected, it can occur in patients with non-STEMI. This case highlights the existing lack of randomized trials to determine the type and duration of anticoagulant therapy for managing LVT.

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#### Learning Objectives

Choice of anticoagulation in patients with LVT  
LVT after non-STEMI

#### Abstract Reference Number: 75

Authors: Kristina Menchaca, md

Co-authors: Catherine Ostos Perez, Internal Medicine, PGY3, University of Miami, Florida; Nemanja Draguljevic, Internal Medicine, University of Belgrade, Serbia;

**Submission Type:** Case Presentation (A clinical scenario with discussion of a patient)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Poster Abstract Presentation

**Abstract Title: MECHANICAL COMPLICATION OF MYOCARDIAL INFARCTION IN REPERFUSION ERA: A RARE CASE OF VENTRICULAR SEPTAL RUPTURE PRESENTING WITH ACUTELY DECOMPENSATED HEART FAILURE**

#### Abstract

Introduction:

Ventricular septal rupture is a rare and fatal post-infarction complication in the reperfusion era with decreased incidence from 1-3% to 0.17-0.31%. Management remains challenging due to the rarity of this complication. Clinical presentation may vary from relative hemodynamic stability to cardiogenic shock and multiorgan failure. We present the case of subacute inferior myocardial infarction (MI) complicated with ventricular septal rupture and acutely decompensated heart failure successfully treated with a delayed surgical approach and postoperative extracorporeal membranous oxygenation (ECMO).

#### Case Presentation:

A 56-year-old man was referred for evaluation of ventricular septal defect (VSD) that was observed on a transthoracic echocardiogram (TTE) performed to evaluate a cardiac murmur and one month of progressive dyspnea. Examination revealed a 4/6 holosystolic murmur over the entire precordium with a trill, scrotal swelling, and bilateral pitting edema of the lower extremities. The electrocardiogram showed QS morphology in inferior leads. A TTE showed a large basal inferior defect of the interventricular septum and right ventricular hypokinesis. The transesophageal echocardiogram demonstrated severe dilation of the right atrium and ventricle but failed to visualize the septum. A right heart catheterization revealed elevated pulmonary artery and wedge pressures and significant left to right shunt (Qp: Qs 2:1). Cardiac output and index were 3.46 L/min and 1.6 L/min/m<sup>2</sup>, suggesting cardiogenic shock. Coronary angiography revealed 100% occlusion of the right coronary artery due to thrombus, suggesting subacute MI. The next step was closing VSD with a surgical approach. Venoarterial ECMO was used for post-operative recovery due to concerns regarding the response of the right ventricle to the closure of the shunt. ECMO was discontinued on postoperative day four. Dobutamine and nitroglycerine were continued. Vasopressor and inotropes were gradually discontinued within 14 days.

#### Discussion:

Conservative management alone leads to a mortality of 95%. Surgical repair is standard of care, and ACC/AHA guidelines recommend an emergency or early surgical intervention. However, the timing of surgery is debated, and studies report better outcomes and decreased mortality with a late surgical approach due to more time for friable infarcted tissue to heal. Hemodynamic stability plays a role in the decision to delay surgical repair. The use of a mechanical device, ventricular assist device, and intra-aortic balloon pump is beneficial in uni and bi-ventricular failure, decreasing pre and afterload as a bridge to definitive surgical management in patients with cardiogenic shock. We successfully utilized ECMO for post-operative recovery.

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#### Learning Objectives

To learn about rare post-MI mechanical complications and their management.

#### Abstract Reference Number: 76

Authors: Kenneth Paik, BS

**Submission Type:** Case Presentation (A clinical scenario with discussion of a patient)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Oral Abstract Presentation (On-Site in Memphis ONLY - 10 minute presentation)

**Abstract Title: Reversal Brain Death: A Patient Case Report**

**Abstract**

**Background:**

Brain death accounts for about 2% of deaths in the United States and is often caused by traumatic brain injury. It is also commonly referred to as death in terms of neurologic language and is used as a legal definition of death. It is regarded as irreversible termination of the entire brain functionality and loss of brainstem reflexes such as loss of pupillary responsiveness, loss of corneal, gag, and cough reflexes. There is no regularity to confirm brain death. Therefore, different standards are in effect to assess a brain death examination and document the patient as brain dead.

**Introduction:**

We present a case of an 18-year-old female who suffered a devastating gunshot wound to the head under unknown circumstances. On initial presentation, the patient had a Glasgow Coma Scale score below 8, with loss of consciousness and inability to communicate. The brain injury was felt to be nonsurvivable by the neurosurgeon on call and was reportedly verified by a second neurosurgeon. Neurology was consulted and recommended palliative care when patient had no seeming improvement in neurological function along with negligible intracranial blood flow throughout the sagittal sinus on nuclear medicine study. The patient had retained a cough and gag reflex, which led to a transfer to another hospital at the request of the family for a second opinion. A repeat nuclear medicine study and CT Venogram to evaluate for sinus injury was completed for recommended craniectomy with washout and closure of the wound. To our surprise, these new studies showed normal patent blood perfusion of the intracranial system, despite the initial image findings. After gunshot cranial wound excision and craniectomy of the bone fragment, the patient's neurological status showed improvement. Management/ Outcome/and

**Conclusion:**

Patient was managed with standard hospitalization procedures including an inferior vena cava filter, tracheostomy, and peg tube placement. She has been monitored for intracranial pressures and potential hydrocephalus development. With all measures in place, the patient is improving in function and neurological status. Despite the initial presentation and declaration of brain death, it was confirmed that the patient has complete brain function with present brainstem reflexes and positive imaging studies showing perfusion and blood flow to the brain. Although prognosis cannot be determined, it cannot be confirmed that the patient has suffered a brain death injury.

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Starr R, Tadi P, Pflieger N. Brain Death. 2021 Oct 14. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan-. PMID: 30844186.

Russell JA, Epstein LG, Greer DM, Kirschen M, Rubin MA, Lewis A., Brain Death Working Group. Brain death, the determination of brain death, and member guidance for brain death accommodation requests: AAN position statement. *Neurology*. 2019 Jan 02; [PubMed]

**Learning Objectives**

Implement new definitions of brain death. Discuss legal implications of calling a patient brain dead. Compare and contrast criteria of brain death examination.

**Abstract Reference Number: 77**

Authors: Catherine ostos Perez MD

Co-authors: Catherine A. Ostos Perez MD PGY3 University of Miami JFK Medical Center, Atlantis, FL, Kristina Menchaca MD PGY3 University of Miami JFK Medical Center, Atlantis, FL, Can X. Jones MD PGY3 University of Miami JFK Medical Center, Atlantis, FL, Virginia Velez Quinones MD PGY2 University of Miami JFK Medical Center, Atlantis, FL, Katherine Hodgkin MD PGY3 University of Miami VA Medical Center, West Palm Beach, FL

**Submission Type:** Unusual Case Presentation (a unique, rarely seen clinical scenario with discussion of a patient)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Poster Abstract Presentation

**Abstract Title: Clotting and bleeding: complex decision-making in a cancer patient with pulmonary embolism and intracranial hemorrhage**

**Abstract**

Introduction

Venous thromboembolism (VTE) is a significant cause of mortality in patients with cancer. The risk of major bleeding of VTE with unfractionated heparin (UFH) is less than 3%, however, in patients with cancer, this risk is higher. We present a complex decision-making case of a colon cancer patient treated for pulmonary embolism, who developed an intracerebellar hemorrhage.

Case description

61-year-old man with past medical history of alcohol abuse, colon cancer diagnosed 3 months prior to admission on chemotherapy presented due to one week of fevers and chills, shortness of breath. He was admitted for sepsis, with MRSA bacteremia and endocarditis from an infected port catheter. On computerized tomography (CT) angiogram, he was found to have a pulmonary embolism, with no right ventricular strain. Patient was started on anticoagulation with unfractionated heparin drip. On day 7 of admission, he had an acute change in mental status, barely arousable, and shallow breathing. He was intubated for airway protection. CT brain showed acute large cerebellar hemorrhage in the posterior fossa with compression and displacement of right lateral and 4th ventricle, and another one adjacent to sagittal sinus. Patient received treatment with protamine and neuroprotective measures. However, he had a poor neurological exam with only preservation of brainstem reflexes, ICH score of 4 points (30-day mortality rate of 97%), and was deemed not a good candidate for neurosurgery. The next day patient's neurological status was improved; he was awake and following basic commands, hemorrhage was stable and an extraventricular drain was placed. Patient's hospital course was long and complicated by renal failure. Eventually was extubated, and recovered some functionality.

Discussion

Bleeding is the primary complication of anticoagulation. The treatment relies on stopping the anticoagulant, use of specific reversal agents, and considering prohemostatic agents and modalities that may remove anticoagulant. Management of intracerebral hemorrhage is also focused on neuroprotective measures and in certain cases emergent neurosurgery. Complex decision-making occurs when patients have multiple risk factors for bleeding (age, renal function, metastatic cancer) and at the same time are hypercoagulable. Cancer patients with venous thrombosis are more likely to develop recurrent VTE and major bleeding during anticoagulant treatment, thus there are specific guidelines for oncologic patients. Conclusion

The treatment of cancer-related VTE is preferable with LMWH, although UFH is more commonly used despite having more risk of bleeding in this population. Personalized treatment incorporating risk of bleed and preferences is essential. Adjustments and choice of anticoagulation should be done based on patient's characteristics. Future research is needed to focus on optimizing risk assessment tools and biomarkers to prevent bleeding.

**References**

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### Learning Objectives

Describe indications of anticoagulation and risks of bleeding in cancer patients

## Abstract Reference Number: 78

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**Submission Type:** Clinical Science Presentation (A well-defined basic or clinical research project)

**Submission Category:** Surgery & Surgical Specialties

**Presentation Type:** Poster Abstract Presentation

### Abstract Title: Indications for Bone Defect Fillers After Medial Opening Wedge High Tibial Osteotomy: A Systematic Review

#### Abstract

**Introduction:** Medial opening wedge high tibial osteotomy (OWHTO) is a well-established treatment for correction of varus-aligned knees. A variety of bone void filling materials are available as an alternative to locked fixation without bone filling. Understanding indications and complications associated with each bone filler is critical to increasing successful outcomes following surgery. The purpose of this study was to determine complications and optimal methodology for filling OWHTO.

**Methods:** A systematic review of the literature was performed according to Preferred Reporting Items for Systematic Reviews and Meta Analysis (PRISMA) guidelines. Databases searched: PubMed, MedLine, EMBASE, Web of Science, and Tulane Medical Library from 2015- present. Studies were included if they discussed patients treated by OWHTO with the following details- surgical technique (including osteotomy gap size), filler type (synthetic, allograft, autograft), fixation type (locking versus non-locking), type of plate (Tomofix, Puudu, Orthomed), and degrees of varus correction. Publications must be reported in English, peer reviewed, and originated in the US or countries that offer the same procedures, protocol, and outcome reporting.

**Results:** 225 studies were initially identified and 24 studies were included. Regarding the surgical technique used in the 24 studies 10 studies evaluated no bone filler (41.6%), 11 synthetic material (45.8%), 9 allograft (37.5%), and 6 autograft (25%). A total of 1,424 knees underwent OWHTO in the 24 studies: 451 knees had no filler (31.7%), 359 synthetic (25.2%), 456 allograft (32.0%), and 159 autograft (11.1%). Data analysis indicates no difference in outcome based on filler type. Notably, 845 women (59.3%) and 579 (40.7%) men were included, which may suggest female prominence in susceptibility for OWHTO. **Conclusion:** Our review found that OWHTO long-term outcomes are unaffected by the type of bone filler. This finding should impact the way surgeons address this procedure, as greater than 50% of OWHTO are completed with some form of bone filler. In 2015, 14.6% of OWHTO procedures were done without gap filler, and OWHTO without bone filler has increased to 31.7% from 2015-2022. This trend suggests more surgeons are recognizing that gap filler is unnecessary. Orthopaedic surgeons should consider this data when using gap filler for OWHTO as it may contribute to added surgical costs without any functional benefit.

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### Learning Objectives

Learning Objectives: Upon completion, attendees should be better prepared to:

- 1). Recognize the indications for Medial Opening Wedge High Tibial Osteotomy.
- 2) Summarize the options for gap filler in OWHTO.
- 3) Advocate for the use of no gap filler with locked fixation in the majority of cases.

### Abstract Reference Number: 79

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**Submission Type:** Clinical Science Presentation (A well-defined basic or clinical research project)

**Submission Category:** Surgery & Surgical Specialties

**Presentation Type:** Poster Abstract Presentation

**Abstract Title:** The Prevalence of “Pipelining” at the Top Orthopaedic Sports Medicine Fellowship Programs

### Abstract

Background:

The term “pipelining” refers to the phenomenon that applicants from certain residency programs frequently match at the same fellowship programs. However, it is unclear how prevalent pipelining is amongst the top orthopaedic sports medicine fellowship programs. The purpose of this study was to determine the prevalence of pipelining at the top orthopaedic sports medicine fellowships in the United States.

#### Methods:

The fellowship programs included in this study came from a recent survey study that determined the top 10 programs as perceived by fellowship applicants over the past 5 years. The residency programs of current and former fellows at each of these fellowship programs over the last 5-10 years was determined by searching program websites and/or contacting program coordinators/directors. For each program, we determined the number of occurrences of more than 2, 3, and 4 fellows from the same residency program. We also calculated a “pipelining ratio”, defined as the ratio of the total number of fellows at the program over the duration of the study to the number of different residency programs represented within the fellowship program.

#### Results:

Data was obtained from 7 of the top 10 fellowship programs. Of the remaining 3 programs, 1 declined to provide the information and 2 did not respond. Pipelining was found to be highly prevalent at one program (Program 1), with a pipelining ratio of 1.9 (Table 1). Two different residency programs had at least 5 residents match at Program 1 over 10 years. Although not as prevalent, there was also found to be evidence of pipelining at Programs 2 and 3, with one residency program matching 5 residents over 5 years at Program 2, and 2 residency programs matching at least 2 residents at Programs 2 and 3 over 5 and 10 years, respectively. Conclusion:

This study highlights the prevalence of pipelining at the top orthopaedic sports medicine fellowship programs. The practice of pipelining may present a disadvantage for residents from residency programs without previous connections to certain fellowship programs. Future studies may seek to determine methods of minimizing the practice of pipelining and to provide a fair assessment of all fellowship applicants.

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#### Learning Objectives

- 1) Describe how the term “pipelining” refers to the phenomenon that applicants from certain residency programs frequently match at the same fellowship programs.
- 2) Discuss that there is evidence of pipelining at the top orthopaedic sports medicine fellowship programs.

#### Abstract Reference Number: 80

Authors: Preston Terle, BS

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**Submission Type:** Clinical Science Presentation (A well-defined basic or clinical research project)

**Submission Category:** Surgery & Surgical Specialties

**Presentation Type:** Poster Abstract Presentation

## **Abstract Title: Diversity Related Positions in Orthopaedic Residency Programs**

### **Abstract**

**Introduction:** Orthopaedic surgery remains the least diverse medical specialty when measured in terms of practicing physicians and trainees. The purpose of this study was to determine the number and different types of diversity, equity, and inclusion (DEI) positions within orthopaedic surgery residency programs in the United States. **Methods:** The Fellowship and Residency Electronic Interactive Database (FRIEDA) was used to obtain a list of all Accreditation Council for Graduate Medical Education (ACGME) accredited orthopaedic surgery residency programs. Military programs were excluded, and one other program was excluded for lack of a functional website. The websites for the remaining 193 orthopaedic residency programs were studied from June 6, 2022, to June 26, 2022. The following data was collected from each residency program website: program location, university or community based, allopathic or osteopathic recognition, number of faculty in the orthopaedic department, number of residents per year, diversity-related statements, and diversity-focused faculty positions. **Results:** Of the 193 programs evaluated, 74 (38.9%) included DEI statements on their website, while only 42 (21.8%) had at least one DEI specific faculty role (e.g., diversity committee, diversity liaison, director of diversity and inclusion, vice chair for DEI). For 16 (8.3%) programs, the faculty role was non-specific to the orthopaedic residency program. Non-specific roles were primarily created by the affiliated school of medicine, but in 4 (2.1%) outlier cases, faculty members assumed DEI roles through a medical center, a graduate medical education program, or a department of surgery. **Conclusion:** Seventy-four of 193 (38.9%) orthopaedic residencies advocated for diversity, equity, and inclusion through DEI statements or initiatives (eg scholarships given to underrepresented in medicine applicants for away rotations at orthopaedic residencies), yet only 42 (21.8%) currently have a DEI faculty position. Previous studies have called for a greater number of DEI positions and committees amongst orthopaedic residencies due to the lower admittance rate of qualified URiM applicants. A role specifically dedicated to DEI may increase the number of women and URiM applicants pursuing a career in orthopaedic surgery.

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### **Learning Objectives**

1-To determine the number and different types of Diversity, Equity, and Inclusion (DEI) positions within orthopaedic residency programs in the US. 2-To understand that including DEI specific positions within orthopaedic residency programs may help recruit women and other underrepresented in medicine (URiM) students.

## **Abstract Reference Number: 81**

**Authors:** Akshita Patel, BS,MS,DO

**Co-authors:** Amy Vertrees, MD, Department of Surgery, Maury Regional Medicine Center, Columbia, TN; Domenico Palazzolo, PhD, Department of Physiology, Lincoln Memorial University-DeBusk College of Osteopathic Medicine, Harrogate, TN; Gregory Keagy, DO, Department of Surgery, Lincoln Memorial University-DeBusk College of Osteopathic Medicine, Harrogate, TN

**Submission Type:** Clinical Science Presentation (A well-defined basic or clinical research project)

**Submission Category:** Surgery & Surgical Specialties

**Presentation Type:** Poster Abstract Presentation

**Abstract Title: The Implications on the Rate of Hospital Admissions and Financial Outcomes in Patients with Acute cholecystitis during COVID-19 Pandemic**

## Abstract

**INTRODUCTION:** This study aims to investigate the implications of the Covid-19 pandemic on the number of acute cholecystitis (AC) cases and the financial burden imposed on patients due to rising healthcare costs in the USA. We hypothesize that the average number of patients admitted for AC will be decreased. **METHODS AND PROCEDURES:** ICD10 codes were used to identify patients diagnosed with acute cholecystitis at Maury Regional Medical Center from 2019-2021. The average length of stay (ALOS) and hospital costs for these patients were compared. Differences in these parameters were determined using linear regression analysis. **RESULTS:** As compared to total inpatient admissions, the percentages of AC cases in 2019, 2020, and 2021 were 0.21%, 0.29%, and 0.30%, respectively, and the average length of stay was 2.68, 2.95, and 3.66 days, respectively. The direct cost per case ranged from \$4,900 to \$6,100. This data suggests a slight increase in each parameter over time. Linear regression analysis confirms these results, revealing a progressive increase in the number of AC cases, ALOS, and direct cost per case ( $R^2 > 80\%$ ). While the slopes of these regression lines are significantly different ( $P < 0.01$ ), the lines themselves do not deviate significantly from zero. **CONCLUSION:** The ALOS and direct cost per case increased at a greater rate than the number of AC cases during 2019-2021. However, this observation is dubious since the slopes of the regression lines did not deviate from zero. It may be possible to achieve a more robust change if the time period was expanded.

## References

Article entitled "Multicentre cohort study of acute cholecystitis management during the Covid-19 pandemic."

## Learning Objectives

Identify the implications of Covid-19 pandemic on the American Healthcare  
Discuss the effect of the pandemic on the financial burden of the healthcare

## Abstract Reference Number: 82

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**Submission Type:** Case Presentation (A clinical scenario with discussion of a patient)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Oral Abstract Presentation (On-Site in Memphis ONLY - 10 minute presentation)

## Abstract Title: A Unique Case of Severe Sepsis and Acute Respiratory Failure in the Setting of Aseptic Epiploic Appendagitis of the Descending Colon

### Abstract

Introduction:

Epiploic appendagitis is rare and is typically a benign and self-limited condition, managed conservatively with analgesics. Often, patients present with focal abdominal pain, with normal vitals and with normal lab results, and the condition is frequently misdiagnosed as a different intraabdominal pathology such as diverticulitis or appendicitis. They occur predominately in the rectosigmoid with the lowest incidence in the descending colon.

Case Presentation:

This present case describes a 79-year-old male who was admitted for dizziness, decreased appetite, and dyspepsia with a past medical history of coronary artery disease status-post CABG, type II diabetes, heart failure, COPD, and hypertension with normal vitals, normal white blood cell count, hyponatremia, elevated BUN/creatinine, and mild elevation of troponins with non-localized abdominal pain on exam. Ultrasound of the gallbladder demonstrated cholelithiasis without duct enlargement, but a HIDA scan showed normal gallbladder filling. A CT of the abdomen demonstrated mild diverticulitis in the descending colon. Patient thereafter developed severe sepsis with

worsening mental alteration and respiratory failure despite appropriate therapy. Repeat CT of the abdomen was performed and demonstrated a new finding of an epiploic appendagitis. Working Diagnosis: The working diagnosis of epiploic appendagitis was elected, as previous workup had ruled out alternative pathologies and the patient continued to decline despite appropriate empiric therapy. Management/Outcome: The epiploic appendage was surgically removed and the patient rapidly improved post-operatively and was eventually discharge home. This case illustrates an already rare pathology, in the rarest of locations (descending colon), with a previously undocumented association with a patient's critical decompensation and stabilization post-operatively.

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### Learning Objectives

Upon completion of this lecture, learners should be better prepared to identify and diagnose the rare pathology of epiploic appendagitis in a typical and atypical presentation.

### Abstract Reference Number: 83

Authors: Raj Patel, MBA

Co-authors: Raj H. Patel, MBA, 3rd Year Medical Student, Edward Via College of Osteopathic Medicine, Monroe, LA, USA; Padma V. Chitnavis, MD, Dermatology, Carilion Clinic Dermatology and Mohs Surgery, Roanoke, VA, USA; and Patrick S. Rush, DO, Dermatopathology, Virginia Tech Carilion School of Medicine, Roanoke, VA, USA.

**Submission Type:** Case Presentation (A clinical scenario with discussion of a patient)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Poster Abstract Presentation

### Abstract Title: Proton pump inhibitor-induced dermal hypersensitivity reaction masquerading as an arthropod-bite reaction

#### Abstract

Introduction: Proton pump inhibitors (PPIs) are widely prescribed as effective suppressants of gastric acid secretion and are generally well tolerated by patients. Several studies suggest that the adverse drug reactions caused by PPIs are increasing, however, the true rate of hypersensitivity reactions remains unknown despite the high frequency of prescription. Diagnosis can often be challenging and is heavily reliant on history as the clinical presentation and histopathologic findings may be suggestive of skin conditions from a variety of unrelated sources. Case Presentation: We present the case of a 73-year-old woman who presented to the dermatology clinic with a diffuse, erythematous, papular rash which was resistant to treatment with corticosteroids, antihistamines, and scabicides. The clinical features of the lesions in conjunction with histologic findings led to concern for an arthropod bite reaction. Final Diagnosis: After extensive workup, pantoprazole was identified as the inducing factor as the patient reported significant improvement of the rash and alleviation of pruritic symptoms following discontinuation of this medication. Outcome: To date, no reports have described a PPI-induced skin reaction with the clinicopathologic appearance of arthropod bite reaction lesions. Our case seeks to illustrate the importance of having a high index of suspicion for PPI-induced skin rashes in patients with an unsuggestive history for arthropod

bite reaction. Early recognition can prevent extensive workup and treatment-related costs which may otherwise arise from the management of this atypical clinical situation.

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### Learning Objectives

- Our experience highlights the importance of considering PPIs as a possible cause of drug eruption in patients whose examination is more suggestive of arthropod bites.
- It is vital for clinicians to understand the varied appearance of cutaneous reactions to PPIs and to consider them as part of the differential diagnosis in at-risk patients. - Increased awareness of this presentation can shorten the time to diagnosis, improving clinical management and patient outcomes. Upon completion of this lecture, learners should be better prepared to: understand the varied appearance of cutaneous reactions to PPIs to consider them as part of the differential diagnosis in at-risk patients.

### Abstract Reference Number: 84

Authors: Kiely Curran, DO

Co-authors: Tejbir S. Pannu, MD, PGY-1, Orthopedic Surgery, Larkin Community Hospital

**Submission Type:** Clinical Science Presentation (A well-defined basic or clinical research project)

**Submission Category:** Surgery & Surgical Specialties

**Presentation Type:** Poster Abstract Presentation

### Abstract Title: A Review the Efficacy of Extended Antibiotic Prophylaxis in Patients with a BMI over 35 Undergoing TKA/THA

#### Abstract

**BACKGROUND.** The incidence of postoperative infection in the United States is 5.4%/4.8% for patients undergoing THA and TKA, respectively. The risk of postoperative infection increases by 6.7 times in operations on patients with severe obesity, those with a BMI greater than 35 kg/m<sup>2</sup>. These infections not only increase morbidity and mortality, but increase the average hospital stay by and could lead to recurrence of surgery. Infection rates are statistically significantly higher in the patient population with a BMI over 35 kg/m<sup>2</sup>. Postoperative infection can be prevented by the use of antibiotics. The use of extended use prophylaxis antibiotics have been proposed in high risk populations undergoing TKA/THA in order to mitigate the infection rates. The standard regimen for extended use of prophylaxis antibiotics is prophylactic oral antibiotics a minimum of 7 days after discharge (500 mgs Cefadroxil twice daily for 7 days or 300 mg Clindamycin three times a day for 7 days if anaphylactic reaction to



cephalosporins). Recent studies have explored the impact that extended use of prophylactic antibiotics have on reducing the rates of postoperative infection in the patient population with a BMI over 35 kg/m<sup>2</sup>. **METHODS.** A systematic search identified studies regarding the use of an extended prophylaxis antibiotic regimen among TKA/THA patients with a BMI over 35 kg/m<sup>2</sup>. All data was obtained using published peer-reviewed journal articles from PubMed and Google Scholar using the keywords, “TKA+Infection”, “THA+Infection”, “THA+Prophylaxis”, “TKA+Prophylaxis”, “TKA+BMI,” and “THA+BMI.” The data was not limited to a particular time frame. **RESULTS.** Studies noted a 81% reduction in PJI in patients undergoing THA/TKA with a BMI over 35 kg/m<sup>2</sup> when treated with prophylaxis extended antibiotic therapy. Evidence of an incidence reduction of 3.9% to 0.0% was statistically significant in patients with a BMI over 40 kg/m<sup>2</sup> treated with extended antibiotic prophylaxis. **CONCLUSIONS.** The data shows that extended antibiotic prophylaxis prevents postoperative infection in high-risk patients with a BMI over 35 kg/m<sup>2</sup> undergoing TKA/THA procedures. More research needs to be done to standardize a method of prophylaxis, but extended antibiotic prophylaxis seems to help this high risk population.

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Obesity and perioperative morbidity in total hip and total knee arthroplasty patients  
*J Arthroplasty*, 20 (7 Suppl. 3) (2005), pp. 46-50

### Learning Objectives

**OBJECTIVE.** The goal of this review was to evaluate the efficacy of extended prophylactic antibiotics following total hip arthroplasty (THA) and total knee arthroplasty (TKA) in patients with a BMI over 35 kg/m<sup>2</sup> in order to reduce the incidence of postoperative infection.

### Abstract Reference Number: 85

**Authors:** Mahant Malempati, BS

**Co-authors:** Mahant Malempati BS, MS2, Tulane University School of Medicine, New Orleans, Louisiana  
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**Submission Type:** Clinical Science Presentation (A well-defined basic or clinical research project)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Oral Abstract Presentation (On-Site in Memphis ONLY - 10 minute presentation)

**Abstract Title:** Stroke and COVID-19: a review of case report trends

## Abstract

**Introduction:** Sixty-eight case reports were reviewed to determine the incidence of stroke among patients who presented with SARS-CoV-2 (COVID-19) and to evaluate the impact of COVID-19 on stroke outcomes.

**Method:** Case reports of patients, who while hospitalized had stroke and COVID, were selected using Pubmed and Google Scholar. Inclusion criteria were recent cases (limited to a period of 2019-2022) in English language publications only. Systemic reviews were excluded from the search. We then performed an analysis on the following variables for all 68 patients: age, Covid Induced Stroke (CIS) vs. Stroke then Covid (STC), vs. Covid and Stroke (CAS), NIHSS score, type of stroke, mortality, functional outcomes, and co-morbidities listed. In addition, we compared distribution of co-morbidities, stroke type, sex and age.

**Discussion:** We found that the majority of patients admitted to the hospital for COVID-19 and then subsequently developed a stroke (55/68). The mechanisms by which COVID induces stroke is not completely understood however one hypothesis is that COVID-19 contributes to this increased incidence because of cytokine storm, thrombosis, platelet activation, extrinsic and intrinsic coagulation pathway activation, endothelialitis, and neutrophil extracellular traps (NETs).<sup>1</sup> Interestingly, among the cases we included in our study, hypertension (36/67) was prevalent in more patients than diabetes mellitus (22/67) as well as when compared to other co-morbidities. This finding has been corroborated across other case reports and systemic reviews.<sup>2,3</sup> Importantly, we observed differences in gender between the STC and CAS categories, however this may be due to the small number of patients in each category. It will be instructive to determine and characterize any sexual dimorphic inferences from a larger patient population who presented with COVID-19 and were later diagnosed with stroke.<sup>4</sup>

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## Learning Objectives

1. Understand the current pathophysiological pathways that are believed to contribute to pathogenesis of COVID-19 related stroke these include the relationship between COVID-19 inflammation and coagulopathy.
2. Understand the physiological connection between co-morbidities the increase the likelihood of stroke for COVID-19 patients.
3. Demonstrate which co-morbidities and clinical course patients typically follow when presenting with COVID-19 and stroke.

## Abstract Reference Number: 86

Authors: Mahant Malempati, BS

Co-authors: Daniel Ashley BS, University of Queensland, Brisbane, Queensland; Mahant Malempati BS, MS2 Tulane University School of Medicine; Joe Iwanaga DDS, PhD, Tulane University School of Medicine, New Orleans, Louisiana; Łukasz Olewnik D.P.T., Ph.D, Medical University of Łódź, Łódź, Poland; Shane Tubbs PhD, MS, PA-C, Tulane University School of Medicine, New Orleans, Louisiana

**Submission Type:** Unusual Case Presentation (a unique, rarely seen clinical scenario with discussion of a patient)

**Submission Category:** Surgery & Surgical Specialties

**Presentation Type:** Oral Abstract Presentation (On-Site in Memphis ONLY - 10 minute presentation)

**Abstract Title: Degenerated extensor hallucis brevis accessorius: A case report**

**Abstract**

**Introduction:** The extensor hallucis brevis accessorius has rarely been mentioned in the extant medical literature. Here, we present the case of a cadaver found to have such a muscle and discuss the findings. Specifically, the muscle was observed to be degenerated both grossly and histologically. Therefore, both the gross and histological findings are presented. Such unusual cases are of archival value for future authors to compare their findings.

**Methods:** During the routine dissection of the left foot in a 94-year-old at death male cadaver, a tendon-like structure was found. The entire structure was harvested for histological observation (Fig. 3). Masson-trichrome staining was then performed.

**Results:** This variant tendon was found deep to the tibialis anterior and extensor hallucis longus muscles and in the same layer as the extensor hallucis brevis muscle. It originated from the dorsal aspect of the navicular and inserted onto the first metatarsal and first metatarsophalangeal joint capsule. The origin of the structure was wider than its distal tendon and grossly appeared to be made up of fat. The length and width of the tendon was 70 mm and 1.47 mm, respectively. The structure was determined to be a degenerated extensor hallucis brevis accessorius muscle. No nerve or vascular supply were identified ending in this structure.

**Conclusions:** We identified a degenerated extensor hallucis brevis accessorius muscle in a cadaveric foot. This muscle has rarely been discussed in the extant medical literature. For example, Huntington (1918) depicted the muscle but gave no additional comments regarding its anatomy. To our knowledge, a degenerated case of such a muscle has never been reported in the extant medical literature.

**References**

Intrinsic foot muscle deterioration is associated with metatarsophalangeal joint angle in people with diabetes and neuropathy

<https://www.sciencedirect.com/science/article/pii/S0268003313002258>

Lower Limb. In Clinically oriented anatomy (Eighth edition. ed.)

<https://scholar.google.com/scholar?q=Lower%20Limb.%20In%20Clinically%20oriented%20anatomy>

**Learning Objectives**

- To describe the case of a rare anatomical variant and the reasons for why such a variant could arise
- To demonstrate the basic anatomy of the musculature of the foot in comparison to this anatomical variant.
- To examine why the histology revealed muscular degeneration and common etiologies for this process.

**Abstract Reference Number: 87**

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Sangeetha Isaac, MD, Internal Medicine, PGY3, North Alabama Medical Center, Florence, AL;

Jan Westerman, MD, Pulmonary and Critical Care Medicine Specialist

**Submission Type:** Unusual Case Presentation (a unique, rarely seen clinical scenario with discussion of a patient)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Poster Abstract Presentation

**Abstract Title: Life threatening hematologic emergency from low dose methotrexate**

**Abstract**

**Introduction:** Methotrexate (MTX) is an inhibitor of cellular proliferation and is used in the treatment of several rheumatic, auto-immune, malignant conditions at variable doses. In comparison to high doses mainly used for

malignancies, when given at the standard 7.5-25 mg weekly dose for RA, adverse drug reactions are rare. However, hypoalbuminemia, age, malnutrition, renal failure, and polypharmacy may attribute to developing MTX toxicity resulting in gastrointestinal upset, hepatotoxicity, neurotoxicity, myelosuppression etc just as high doses. Literature review shows only few reported cases reflecting low dose methotrexate associated emergencies. Here we present a case of life threatening pancytopenia caused by low dose MTX, because of renal failure.

63-year-old female came to the ER with chief complaints of nausea, vomiting, shortness of breath, palpitations, weakness for 2 weeks, an episode of nose bleed the day of presentation. Past medical history significant for rheumatoid arthritis managed with folic acid and methotrexate 2.5 mg 5 tabs am, 5 tabs pm once weekly, with last dose taken a week prior to admission. Recent 2-week history of oral thrush, and UTI treated with fluconazole and ciprofloxacin, respectively. Upon presentation her BP was 97/49, HR was 105, saturating 93% on room air with RR of 20. On physical exam, she appeared frail, pale, with generalized bruising and petechiae over anterior chest, and extremities. Her labs showed WBC count 0.7, hemoglobin 3.8, platelet count 1, BUN 80, creatinine 2.9, ALP 59, AST 29, ALT 35, GFR 16, magnesium 1.8, proBNP 432, troponin negative, COVID negative, lactate 5.6. Chest x-ray and CT head were normal. CT abdomen/pelvis without contrast showed hepatic steatosis. She was given IV fluids, antibiotics, then required levophed support. Blood and urine cultures did not show any growth  
Final Diagnosis: Severe pancytopenia secondary to methotrexate toxicity, exaggerated by AKI with the recent use of Ciprofloxacin.

Management: Methotrexate was discontinued. Patient was treated with 3 units of PRBCs, 4 units of platelets and leucovorin 15 mg every 6 hours for 4 days. Subsequently her labs and symptoms improved and was discharged home after 1 week of hospital stay.

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## Learning Objectives

Identify patients on drugs like methotrexate before prescribing other new medications, that may increase likelihood of drug accumulation/toxicity, especially in the setting of AKI risk factors. Treat Methotrexate toxicity by discontinuing the drug, maintaining normal hemodynamics, timely transfusions. Leucovorin also called folic acid bypasses the metabolic block induced by MTX, and must be initiated as soon as possible for life-threatening myelosuppression as described in the case above.

Implement the practice to routinely monitor the labs while patients are on methotrexate therapy. As per ACR, routine blood work should be performed every 4 weeks during first three months of therapy, every 8 to 12 weeks from 3 to 6 months, and every 8-12 weeks thereafter.

## Abstract Reference Number: 88

Authors: Ryan Truitte, MS

Co-authors: Ryan Truitte, MS, Internal Medicine, EVMS, Norfolk, VA; Michael Saadeh, BS, Internal Medicine, EVMS, Norfolk, VA; Parth Parekh, MD, Gastroenterology, EVMS, Norfolk, VA.

**Submission Type:** Unusual Case Presentation (a unique, rarely seen clinical scenario with discussion of a patient)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Poster Abstract Presentation

## **Abstract Title: Case Report of a 77 Year Old Diabetic Male with Intermittent Hypoglycemia and Unremarkable Abdominal MRI**

### **Abstract**

#### **Introduction:**

Insulinomas are rare and difficult to localize tumors. The relatively poor sensitivity of routine imaging has necessitated specialized imaging techniques as a more reliable means of diagnosis.

#### **Case presentation:**

A 77 year old man with past medical history including HFrEF (EF=48%), T2DM, obesity, and atrial fibrillation presented with lightheadedness, nausea, and easy fatiguability over the past year. Symptoms resolved with intake of sweetened beverages. He had documented hypoglycemia at multiple hospital admission within the past year which had prompted discontinuation of his home diabetic medications, including insulin. During these admissions he had admitted to continue to take his glimepiride which, alongside acute kidney injuries noted by elevations in his creatinine at these admissions, was thought to be the culprit of his hypoglycemic state. Initial evaluation was pertinent for blood glucoses as low as 43 mg/dL. At that time results revealed: C-Peptide 7.5ng/mL (ref range= 1.1-4.4), Total Insulin 42 uU/mL (ref range= 0-17 in fasting), Insulin Antibody <0.4U/mL (ref range <0.4). Sulfonylurea screening was negative. An MRI of the abdomen and pelvis showed no evidence of mass. Clinical suspicion remained high so tumor localization scan via administration of 6.6 mCi 111Indium-pentetride (Octreoscan) was ordered. This study revealed radiotracer uptake in the pancreas near the junction of distal body and tail. Endoscopic ultrasound (EUS) was then performed revealing a 16mm x 15mm mass in the body of the pancreas. Final pathology from FNA biopsy confirmed insulinoma with neoplastic cells staining positive for CKC and Synaptophysin. The Ki-67 proliferative index was <2%, supporting the diagnosis of a well differentiated neuroendocrine tumor (WHO Grade 1).

Daily subcutaneous octreotide (25mcg) was initiated resulting in resolution of the hypoglycemic episodes. Follow up imaging was planned with DOTATATE PET/CT prior to definitive management with surgical oncology. Discussion: Insulinomas represent rare PNETs with incidence reported at approximately 1-4 per million person years. CT, MRI, and abdominal ultrasound may miss insulinomas in upwards of 40-60% of cases<sup>1</sup>. Meanwhile, EUS has demonstrated more significant sensitivity and specificity, at 82% and 95%, respectively. Nuclear medicine studies utilizing radiolabeled somatostatin analogues have sensitivities reportedly as high as 83% to 100%.

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### **Learning Objectives**

- To examine imaging modalities most suited to diagnose rare Pancreatic Neuroendocrine tumors

## **Abstract Reference Number: 89**

Authors: Alexis Edmonson, MS

Co-authors: Mary Mulcahey, M.D., Sean Clark, M.S., Victoria Ierulli, M.S.

**Submission Type:** Health System Science (Health care delivery, improving the quality of healthcare for patients and populations, and/or business of medicine)

**Submission Category:** Surgery & Surgical Specialties

**Presentation Type:** Poster Abstract Presentation

**Abstract Title: The Presence of Orthopaedic Sports Medicine Surgeons on Social Media**

**Abstract**

Introduction: Orthopaedic surgeons use social media to connect with other physicians and to communicate medical facts to the public. The purpose of this study was to determine the content posted by orthopaedic sports medicine surgeons on Instagram and Twitter and to evaluate the associated engagement. Methods: Data was collected from 71 orthopaedic sports medicine surgeons' Instagram profiles and 39 surgeons' Twitter profiles between 12/20/2020 - 06/01/22. From the Instagram/Twitter profiles, the handle, number of followers, and posts were recorded. To measure responses to each post, number of likes, comments, and retweets were recorded. The content of posts from both platforms were divided into categories- personal life, research, patient testimony, day in the life, pathway to becoming a physician, clinical cases, medical facts, and team coverage. Results: 1,193 posts from Instagram were identified (12-303). The personal life category had 303 posts with a mean of 137 (13-9,764) likes and 10.5 (0-160) comments (Table 1). The medical facts category had 210 Instagram posts with a mean of 147 likes (1-3,230) and 5.24 (0-97) comments. The surgeon with the largest follower base on Instagram (593,000) received the maximum number of likes in 6/8 categories. 1,284 tweets were identified (8-251). The medical facts category had 251 tweets with a mean of 7.96 (0-110) likes and 1.55 (0-20) retweets. The research category had 243 tweets with a mean of 13.6 (0-134) likes and 2.84 (0-30) retweets (Table 2).

Conclusion: This study showed that the categories with the highest response on Instagram and Twitter were pathway to becoming a physician and day in the life, respectively. There was a correlation between orthopaedic sports medicine surgeons with a larger follower base on Instagram and increased number of likes for individual posts. Orthopaedic sports medicine surgeons should take this information into account to maximize the impact of content shared via social media.

**References**

**Learning Objectives**

Objectives:

1. To evaluate the content shared by orthopaedic sports medicine surgeons on Instagram and Twitter
2. Assess the interaction of Twitter and Instagram posts by orthopaedic sports medicine surgeons by means of likes, comments, and retweets
3. To examine which types of content is most engaging to the public based on interaction with the surgeons' social media posts

**Abstract Reference Number: 90**

Authors: Jessica Leonhardt, MD

Co-authors: Paige Leonhardt, MD, 3rd Year; Rowan Brooks, MD, 3rd Year; Paulina Le, Plastic Surgery, PGY-3; Akio Kozato, MD, PGY-1; Nikki M Burish, MD; Marcia Barnett, MD/MBA, John Henry Pang, MD; Jess Ting, MD

**Submission Type:** Clinical Science Presentation (A well-defined basic or clinical research project)

**Submission Category:** Surgery & Surgical Specialties

**Presentation Type:** Oral Abstract Presentation (On-Site in Memphis ONLY - 10 minute presentation)

**Abstract Title: Role of Suction Assisted Lipectomy for Treatment of Facial Silicone Granulomatosis**

**Abstract**

Background:

The purpose of this study was to present suction assisted lipectomy (SAL) as a less invasive method of softening migrated facial silicone and granulomatosis without the need for medical treatment or aggressive surgical excision.

Methods:

If determined to be appropriate during the pre-operative assessment for facial feminization surgery, SAL is performed. Tumescence local anesthesia is infiltrated to the affected areas through a 2-mm stab incision, and liposuction is performed with a Coleman cannula of the granulomas and migrated silicone. Post-operative visits are performed at 1-week, 2-week, and 6- to 8-week intervals after surgery. If necessary, additional rounds of liposuction can be performed.

#### Results:

A total of 18 patients underwent SAL in combination with facial feminization procedures performed by a single surgeon from 2018-2020. Of these, 4 patients required a second round of liposuction 16-24 weeks post-surgery due to continued palpability and discomfort of silicone. No other sequelae were noted by the surgeon including bleeding, seroma formation, pain at the liposuction sites, or irregular contour deformity. Pre- and post-surgical surveys were administered to each patient to quantify the level of gender dysphoria the patient experienced specific to the face. Among the seven patients who responded, the average level of gender dysphoria experienced pre-surgery was 9 out of 10, and post-surgery was 2 out of 10.

Conclusions: The SAL technique is a minimally invasive and effective method of removing silicone granulomatosis, and results in excellent aesthetic outcomes and improved gender dysphoria for the transgender patient.

#### References

n/a

#### Learning Objectives

1. Describe the development of facial silicone granulomatosis within high risk transgender patient population
2. Propose SAL technique for mitigation of silicone granulomas
3. Discuss contribution/addition of SAL to facial feminization surgery and related improvement in gender dysphoria

### Abstract Reference Number: 91

Authors: Emily Jones, BS,MS

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**Submission Type:** Clinical Science Presentation (A well-defined basic or clinical research project)

**Submission Category:** Surgery & Surgical Specialties

**Presentation Type:** Poster Abstract Presentation

#### Abstract Title: Indications For Lateral Extra-Articular Tenodesis: A Systematic Review

#### Abstract

Background: Currently, there is no consensus on objective measures to determine when augmentation of ACL reconstruction (ACLR) with a lateral extra-articular tenodesis (LET) is indicated. Understanding this is critical to maximize the likelihood of a positive outcome following surgery. The purpose of this study was to determine the appropriate indications from the literature for LET augmentation to ACLR. Methods: A systematic review of the literature was performed using PRISMA guidelines. The following databases were searched: PubMed, EMBASE, Web of Science and Cochrane from 2000-present. Inclusion criteria: participants must include male and/or female patients of any age that underwent LET in addition to ACL reconstruction, studies must report  $\geq 1$  indication for LET, and for observational and RCT study designs, the number of patients with/prevalence of indications must be reported. Publications must be reported in English, peer reviewed, and originated in the US or countries offering

the same procedures, protocol, and outcome reporting. Exclusion criteria: publications that are not peer-reviewed journal articles (conference abstracts, dissertations, study protocols, commentaries), as well as systematic reviews and meta-analyses. Results: 463 studies were identified in a preliminary search with 23 chosen for review using the inclusion criteria. Eight studies used a modified Lemaire technique, 7 used a MacIntosh modified by Arnold-Coker and 8 used other techniques to perform the LET. A total of 2,125 patients (approximately 47% male) received LET augmented with an ACLR procedure. The indications, along with prevalence used in the studies, were as follows: positive pivot shift test (n=19, 82.6%), need for revision ACLR (n=12, 52.2%), ligamentous laxity (n=11, 47.8%), sport participation (n=11, 47.8%), age less than 25 years old (n=8, 34.8%), high risk of graft failure (n=5, 21.7%), and positive Lachman sign (n=4, 17.4%). Conclusion: Data from included studies suggests that regardless of technique/gender, positive pivot shift test ( $\geq$ grade 2) is an objective measurement used to indicate LET in addition to ACLR. Needing revision ACLR was also mentioned significantly more in the literature, suggesting objective measurements of graft failure could be used to indicate this procedure. This data should be considered when determining the appropriate indication for augmenting ACLR with LET.

## References

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## Learning Objectives

1. Discuss the most prevalent objective indications for addition of a lateral extra-articular tenodesis procedure to

mographics, human error and patient subjectiveness of pain and instability in the variability of decision making for addition of this procedure.

## Abstract Reference Number: 92

Authors: Hunter Post, BS, MS

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**Submission Type:** Clinical Science Presentation (A well-defined basic or clinical research project)

**Submission Category:** Surgery & Surgical Specialties

**Presentation Type:** Poster Abstract Presentation

**Abstract Title: Systematic Review of Intra-Articular Use of Antibiotics and Antiseptic Irrigation and their Association with Chondrolysis**

## Abstract



### Background/Knowledge Gap:

Intra-articular antibiotics have been proposed as a treatment for septic arthritis to allow for high local concentrations in the affected joint without subjecting a patient to systemic therapy and its associated toxicity/side effects. However, there is concern for chondrotoxicity with intra-articular use of antimicrobials and antiseptic solutions in high concentrations. The purpose of this study was to evaluate the intra-articular use of antibiotics and antiseptic solutions, determine their association with chondrolysis following in vitro or in vivo administration, and identify the dosages at which they become chondrotoxic.

### Methods/Design:

A systematic review was conducted following the PRISMA guidelines through PubMed, Clinical Key, OVID, and Google Scholar. Studies were included if they were written in the English language and evaluated for chondrotoxicity following in vitro or in vivo intra-articular exposure to an antibiotic and antiseptic solutions. All agents, study characteristics, and conclusions were extracted and summarized.

### Results/Findings:

The initial search resulted in 228 studies, with 36 meeting full inclusion criteria. Overall, chondrotoxicity was not associated with 7 out of 24 (29%) included agents: minocycline, tetracycline, chloramphenicol, teicoplanin, pefloxacin, linezolid, polymyxin-bacitracin. Inconsistent results were noted with 8 (33%) agents: doxycycline, ceftriaxone, gentamicin, vancomycin, ciprofloxacin, ofloxacin, chlorhexidine, and povidone iodine. Chondrotoxicity was evident with 9 (38%) agents, all of which were also dose-dependently chondrotoxic based on reported estimated half maximal inhibitory concentrations (est. IC50): amikacin (est. IC50 = 0.31-2.74 mg/mL), neomycin (est. IC50 = 0.82 mg/mL), ceftazidime (est. IC50 = 1.67-3.95 mg/mL), ceftazidime (est. IC50 = 3.16-3.59 mg/mL), ampicillin-sulbactam (est. IC50 = 8.64 - >25 mg/mL), penicillin (est. IC50 = 11.61 mg/mL), amoxicillin (est. IC50 = 14.01 mg/mL), imipenem (est. IC50 = >25 mg/mL), and tobramycin (est. IC50 = >25 mg/mL). Additionally, certain studies reported chondroprotective effects of doxycycline and minocycline. Conclusions/Implications:

This systematic review identified antimicrobial and antiseptic agents that may be used in the treatment of septic arthritis. The following agents should be avoided due to their dose-dependent chondrotoxic effects: amikacin, neomycin, ceftazidime, ampicillin-sulbactam, penicillin, amoxicillin, imipenem, and tobramycin. Further studies, especially in human models, are needed to clarify the safety of these medications for human intra-articular use.

### References

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- Kim, K.J., et al., Clinical Efficacy of the Antibiotic-Loaded Collagen Sponge During Arthroscopic Treatment of Acute Septic Arthritis of the Native Knee. *Orthop J Sports Med*, 2022. 10(4): p. 23259671221087189.
- Page, M.J., et al., The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *Rev Esp Cardiol (Engl Ed)*, 2021. 74(9): p. 790-799.

### Learning Objectives

Discuss which intra-articular antibiotics and antiseptic solutions are associated with chondrotoxicity, based on all currently existing studies in both animal and human models.

Discuss concerns regarding the ability of certain intra-articular antibiotics and antiseptic solutions to become chondrotoxic, leading to further irreversible joint damage in cases of septic arthritis.

### Abstract Reference Number: 93

Authors: Sanhitha Valasareddy, MD

Co-authors: Rebekah Mulligan, MD, Internal Medicine.

**Submission Type:** Unusual Case Presentation (a unique, rarely seen clinical scenario with discussion of a patient)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Poster Abstract Presentation

**Abstract Title: A Rare Presentation of Genital Tophaceous Gout in an 86-year-old Female**

**Abstract**

Introduction: Gout commonly presents in the first MTP joint of the big toe. Gout progresses in stages with tophi usually presenting after ten years of untreated or undertreated gout. Management includes anti-inflammatory therapy along with urate lowering therapies based on a patient's uric acid level. Symptoms can usually be well managed outpatient with current therapies but can present in unusual areas. Case Presentation: Ms. S is an 86-year-old Caucasian female who initially presented to her primary care physician with complaints of bright red blood on her undergarments. Patient did not have a previous diagnosis of gout. On physical exam, Ms. S had 3-4 raised, lesions which appeared to be filled with white yellow fluid near the labia majora. On labs during initial visit, original baseline uric acid was 5.1 and her creatinine was 0.8. Her BUN/Creatinine ratio was elevated at 41.25 compared to the previous ratio 2-month prior at 31.25. She was given mupirocin ointment with petroleum jelly to apply three times a day without much improvement. A few months later, on exam, there were multiple fluid filled lesions on her labia majora bilaterally. The area was 6 mm wide and was open, red, and draining thin, purulent drainage. It was thought to have been a sebaceous cyst and patient was given doxycycline for 10 days. A soft tissue excision was performed at this time. Culture from left labia majora was sent. Final/Working Diagnosis: A soft tissue biopsy eventually confirmed the diagnosis of tophaceous gout. Management/Outcome: Ms. S was initially treated symptomatically with warm compresses, doxycycline, and mupirocin ointment. After this did not improve symptoms, she was later started on allopurinol therapy as lesions persisted.

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**Learning Objectives**

Discuss this unusual presentation of gout and what risk factors this patient had to predispose her to this diagnosis, if any.

## Abstract Reference Number: 94

Authors: Amanda Watters, BS,MS

Co-authors: Thao D. V. Le, BA, Medical Scientist Training Program, Vanderbilt University School of Medicine, Nashville, TN; Julio E. Ayala, PhD, Molecular Physiology and Biophysics, Vanderbilt University, Nashville, TN

**Submission Type:** Clinical Science Presentation (A well-defined basic or clinical research project)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Oral Abstract Presentation (On-Site in Memphis ONLY - 10 minute presentation)

### Abstract Title: The Glucagon-Like Peptide-1 (GLP-1) Receptor Agonist Liraglutide Requires Liver FGF21 to Reduce Carbohydrate Intake

#### Abstract

**Background:** Glucagon-like peptide 1 (GLP-1) receptor (GLP-1R) agonists promote weight loss by activating central GLP-1R to decrease food intake and body weight. Our lab demonstrated that GLP-1R agonists signal to the brain to increase liver and plasma levels of FGF21, a nutrient sensor produced in response to prolonged fasting and large carbohydrate consumption, in a food intake-independent manner. Given the overlapping roles of GLP-1R agonists and FGF21 in modulating feeding behavior, we hypothesize that FGF21 mediates liraglutide-induced reduction in carbohydrate-rich diet consumption via its action in the brain.

**Methods:** To examine the contribution of FGF21 to liraglutide-induced feeding and weight reduction in the context of carbohydrate-rich diets, age-matched control (wildtype, WT) and liver Fgf21 knockout mice were placed on high-sucrose (17%) diet with low (10%) or high (45%) fat content for 4 weeks, followed by treatment with either liraglutide (200 µg/kg body weight) or vehicle (1x PBS) for 2 weeks (Experiment 1). To test whether central FGF21 signaling is required for liraglutide induced suppression of carbohydrate intake, control mice and mice lacking β-klotho, an obligate co-receptor of FGF21, in CAMK2a+ neurons (brain β-klotho knockout mice) were treated with liraglutide or vehicle for 2 weeks (Experiment 2). Food intake and body weight were monitored daily while body composition and measurements were collected at the start and end of the treatment period. **Results:**

In Experiment 1, liraglutide-treated liver Fgf21 knockout mice lost less weight than their control counterparts when mice were fed a high-fat, high-sucrose diet, suggesting that liver FGF21 is partially required to reduce food intake and body weight in the context of fat and carbohydrate-rich diets. In Experiment 2, brain β-klotho knockout mice lost less weight than control mice, implicating a role for central FGF21 signaling in mediating the feeding and weight-lowering effects of liraglutide.

**Conclusions:**

Results from the present studies demonstrate that liraglutide-induced FGF21 signals through KLB expressed in CAMK2A+neurons to facilitate liraglutide-induced weight loss in mice fed a fat and carbohydrate-rich diet. Better understanding of the GLP1-R-FGF21 axis may lead to more effective and efficient therapeutic options for metabolic modulation in disease settings such as diabetes and obesity.

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### Learning Objectives

1. Recognize the overlapping physiological effects including weight loss and suppression of appetite that FGF21 and GLP-1-R activation can cause especially in context of dietary consumptive habits. Changes to macronutrient consumption can enhance and maximize the benefits of treatment in patient populations. 2. FGF21 plays a mediating role via signaling in the brain to induce weight loss, indicating its potential use as a prognostic marker in patient populations that may benefit from GLP-1R agonist treatment.

### Abstract Reference Number: 95

Authors: Cooper Root, BS

Co-authors: Steven Clary, MD, Orthopedic Surgery, PGY4, University of Kansas Medical Center, Kansas City, KS; Jason Smoak, MD, Orthopedic Surgery and Sports Medicine, PGY6, University of Kansas Medical Center, Kansas City, KS; Brian Everist, MD, Associate Professor, Radiology, University of Kansas Medical Center, Kansas City, KS; Bryan Vopat, MD, Associate Professor, Orthopedic Surgery and Sports Medicine, University of Kansas Medical Center, Kansas City, KS.

**Submission Type:** Clinical Science Presentation (A well-defined basic or clinical research project)

**Submission Category:** Surgery & Surgical Specialties

**Presentation Type:** Poster Abstract Presentation

### Abstract Title: MRI Findings in Core Muscle Injury: A Systematic Review

#### Abstract

**Background:** Core muscle injury (CMI) describes pathology affecting the musculoskeletal anatomy of the lower abdomen, pelvis, and proximal adductors without evidence of a true hernia. Magnetic resonance imaging (MRI) is required for diagnosis but limited by inconsistent pathologic findings and incongruent nomenclature. The purpose of this study is to summarize the literature regarding MRI evidence of CMI to allow for more accurate diagnosis and treatment. **Methods:** A systematic literature search of PUBMED, EMBASE, Cochrane CENTRAL, and Web of Science Core Collection was performed from the inception of the databases to April 2022 to identify studies focused on MRI findings in patients with suspected CMI. Studies examining pathological incidence, clinical correlation, and return to play were included. Studies focusing on treatment or other imaging modalities were excluded.

**Results:** A total of 1912 studies were identified, 23 of which met inclusion criteria. Of the included studies, 15 assessed the pubic symphysis, 17 assessed adductors, 12 assessed the abdominal wall, and 6 assessed hip flexors. There was no consistent definition of pathologic CMI among the included studies. The three most common MRI findings in CMI assessment were bone marrow edema at the pubic symphysis, adductor longus lesions, and rectus abdominis lesions. Evidence of CMI injury on MRI ranging from 4.7% - 23% was seen in asymptomatic patients across multiple studies. Evidence of adductor enthesopathy on MRI showed a significant increase in duration of symptoms (23.5 weeks) and increased groin pain recurrence compared to patients without adductor enthesopathy (6 weeks).

**Conclusion:** There is no consistent definition of pathologic CMI when evaluated with MRI, as evidenced by the various definitions, muscular groups, sequences, and grading. MRI is a useful tool in determining the presence or extent of CMI, but findings should be considered alongside the clinical presentation of the patient. Aside from diagnosis, MRI is useful in assessing the extent of injury, which can give a more accurate timeframe for athletes returning to their previous level of activity. Understanding the variable MRI findings associated with CMI allows

expedited and specific diagnosis of this increasingly recognized pathology, assisting with accurate estimated times for return to play.

## References

### Learning Objectives

- treat core muscle injury with increased accuracy based on MRI findings.
- assess return to play more accurately for athletes with a core muscle injury.

## Abstract Reference Number: 96

Authors: Leo Meller, BS

Co-authors: Leo Meller, BS, Medical Student, MS1, UC San Diego SOM, La Jolla, CA; Chika Okeke, BS, Medical Student, MS3, UC Irvine SOM, Irvine, CA; Christian Makar, BS, Medical Student, MS3, UC Irvine SOM, Irvine, CA; Arham Aijaz, Research Associate, UC Irvine, Irvine, CA; Feben Messele, BS, Medical Student, MS3, UC Irvine SOM, Irvine, CA; Meron Gebreyes, BS, Medical Student, MS3, UC Irvine SOM, Irvine, CA; Kaveri Curlin, BS, Medical Student, MS2, UC Irvine SOM, Irvine, CA; Candice Taylor-Lucas, MD, MPH, Pediatrician, UC Irvine Health, Irvine, CA; Soheil Saadat, MD, PhD, MPH, Faculty of Research, Emergency Medicine, UC Irvine Health, Irvine, CA.

**Submission Type:** Clinical Science Presentation (A well-defined basic or clinical research project)

**Submission Category:** Emergency & Disaster Medicine

**Presentation Type:** Poster Abstract Presentation

### Abstract Title: Lack of Primary Care Physician Coverage and Over-representation of Black Patients and Non-Native English Speakers in Preventable Emergency Department Visits

#### Abstract

Background:

Non-urgent use of the emergency department (ED) is costly for patients. It can lead to increased healthcare spending and ED overcrowding and negatively affect primary care physician (PCP)-patient relationships. We aim to evaluate the association between perceived medical urgency, PCP coverage (whether a patient has a PCP), and patient descriptive characteristics with utilization of the ED for non-urgent clinical care.

Methods:

In this cross-sectional study, adult ED patients were stratified to preventable and non-preventable ED visits according to their emergency severity index (ESI) at an urban, academic ED. A REDCap questionnaire was used to assess descriptive information, self-perceived medical urgency, and PCP Coverage. Chi-Square tests at a 5% significance level were performed to examine differences between race, native language, self-perceived medical urgency, and PCP coverage between preventable and non-preventable ED visits.

Results:

Study participants included 348 adult patients (52% female), of which 160 (46%) were preventable visits (ESI 4-5). There were more preventable visits among Black patients compared to non-Black patients (69.6% vs 30.4%,  $p=0.028$ ) and the preventable group had less native English speakers than the non-preventable group (38.8% vs 61.2%,  $p=0.035$ ). Compared to patients in the non-preventable ED visit group, patients in the preventable group are more likely to agree that they could have been seen and treated effectively by a PCP ( $p=0.003$ ). Fewer patients in the preventable group have a PCP that they can see regularly and make an appointment with compared to the non-preventable group (40.3% vs 59.7%,  $p=0.004$ ).

Conclusions:

Our results indicate that Black patients and non-native English speakers were overrepresented in preventable ED visits compared to their counterparts, suggesting these patients may be more vulnerable to the plethora of negative consequences associated with utilizing the ED for non-emergent medical services. In addition,

our study also revealed that patients in the preventable ED visit group were less likely to have a PCP, even though they were more likely to agree that a PCP could manage their symptoms. Future interventions are needed to address this lack of PCP coverage among preventable ED patients to reduce patient financial burden, ED overcrowding, and overall healthcare spending.

## References

### Learning Objectives

Upon completion of this lecture, learners should be better prepared to:

1. Identify the patient populations over-represented in preventable emergency department visits. 2. Describe the risk factors associated with preventable emergency department visits. 3. Discuss the negative consequences of preventable emergency department visits.

## Abstract Reference Number: 97

Authors: Davin Evanson, BS

Co-authors: Davin Evanson, Medical Student, 2nd Year, Drexel University College of Medicine at Tower Health, Wyomissing, PA; Allegra Delman, Medical Student, 2nd Year, Drexel University College of Medicine at Tower Health, Wyomissing, PA; Michael Romeo, DO, Division of Diagnostic Radiology, Reading Hospital, West Reading, PA.

**Submission Type:** Unusual Case Presentation (a unique, rarely seen clinical scenario with discussion of a patient)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Poster Abstract Presentation

### Abstract Title: Sub-Pericardial Hematoma Following Coronary Angiography

#### Abstract

Introduction:

A sub-pericardial hematoma is characterized by blood adjacent to the heart deep to the pericardium, which is the outer fibrous layer of the heart. A rare case demonstrates an occurrence of sub-pericardial hematoma following percutaneous coronary intervention in an individual presenting with symptoms of myocardial infarction. Initial computed tomography (CT) scan demonstrated contrast reviewed herein. Hematoma was deemed stable following serial CT scans.

Case Presentation:

A 76-year-old male presented with chest discomfort, shortness of breath, and bilateral pitting edema. He had a past history of coronary artery bypass grafting utilizing saphenous vein graft which required percutaneous coronary intervention to vein graft 2 years before presentation. Lab results showed elevated BNP and troponin levels. Initial diagnosis of non-ST-elevation myocardial infarction was made. The patient was taken to the catheterization lab and a 99% stenosis of the vein graft was found. Physicians faced significant challenges due to stenosis severity. Multiple pre-dilations and failed attempts to cross the stenosis occurred. Eventually, advancement of a stent was achieved. However, a perforation of the vein graft was identified, instigating prolonged balloon inflation proximal to the occlusion site. Persistent leakage at the perforation site was observed. An echocardiogram demonstrated no pericardial effusion. Continued monitoring demonstrated hemodynamic stability and repeat injections revealed decrease in flow through perforation. Imaging Outcome: A non-contrast CT chest scan was obtained to determine any evidence of significant hematoma. Within the images, a focus of contrast was identified which was concerning due to the non-contrast setting. Therefore, it was determined that the contrast was likely extravasated fluid from the PCI. Due to the appearance of this hyperdense focus, it was determined that the patient had a hematoma due to perforation of the vein graft. The sub-pericardial location was determined by the anatomical location of the hematoma by the right ventricle. Internal surveillance of hematoma occurred over the next few days. The hematoma had decreased in size and was determined stable, which led to

the patient's discharge. The patient had a follow-up CT scan 2 months later that demonstrated further shrinkage of the hematoma.

Final Diagnosis:

Sub-Pericardial Hematoma

### References

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### Learning Objectives

1. Recognizing a pericardial hematoma versus a pericardial effusion or hemopericardium 2. Determining the difference between an unstable and stable hematoma on imaging

### Abstract Reference Number: 98

Authors: Martin Tan, BS

Co-authors: Jakub Denkiewicz, BS, Medical Student, 3rd Year, University of Tennessee Health Science Center, Memphis, TN; Sneha Mittal, BA, Medical Student, 2nd Year, University of Tennessee Health Science Center, Memphis, TN; Michael J. Herr, PhD, Associate Professor, Department of Cell, Developmental, and Integrative Biology, University of Alabama at Birmingham, Birmingham, AL.

**Submission Type:** Clinical Science Presentation (A well-defined basic or clinical research project)

**Submission Category:** Mental Health

**Presentation Type:** Oral Abstract Presentation (On-Site in Memphis ONLY - 10 minute presentation)

### Abstract Title: Understanding the Utility of a Student-based Wellness Committee: A Survey of Medical Students

#### Abstract

**Background/Knowledge Gap:** Throughout medical education, students must navigate demanding academic and professional responsibilities while achieving and maintaining personal wellness. Institutional initiatives with voluntary participation are not always utilized by students. Though many wellness interventions have been implemented, previous studies have experienced difficulties establishing the efficacy of such interventions  
**Methods/Design:** The survey consisted of 10 free response, 7 multiple choice, and 54 Likert scales and was split into 4 sections: conceptions of wellness, use and perceived efficacy wellness programs, barriers to wellness and the use of related programs, and what students want from future interventions. **Results/Findings:** As hypothesized, students reported that their professional responsibilities were overwhelming and left them little time for personal well-being. Students rated “stigma” and “fear of judgment” as lower barriers than “time” and “professional responsibilities,” which may reflect institutional success at creating a more mental health-aware culture. However, students perceived that their personal efforts had between 70% and 80% more efficacy than school-run, student-run, and community-based programs. Regarding 12 aspects of wellness, “relaxation and mental rest” ranked 2nd most important on average, yet regarding 12 aspects of long-term fulfillment, “ease of lifestyle” was 10th. **Conclusions/Implication:** Perhaps students intellectually know the signs of burnout, but they prioritize professional advancement at the expense of personal well-being and struggle to consistently recognize signs of burnout in themselves. Destigmatization is a baseline necessity, but a more fruitful use of resources might include educational workshops, voluntary and active social engagements, schedule flexibility, counseling availability, and opportunities for individualized professional mentorship. In conclusion, students’ opinions of student-run and

school-run programs are similar; institutional efforts need to be more individually targeted to help students identify their needs and find their own avenues to maintain wellness.

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### Learning Objectives

1. Describe barriers to wellness and barriers to use of wellness initiatives as reported by medical students.
2. Identify discrepancies between what current wellness programs offer vs. what students need.
3. Synthesize new wellness interventions better suited to enable student wellness.

### Abstract Reference Number: 99

Authors: Peter Wang, BA

Co-authors: Jean Kim, BS, Medical Student 2nd Year, University of Texas Medical Branch, Galveston, TX; Guillermo Focerrada, MD, Research Scientist, University of Texas Medical Branch, Galveston, TX; Jose Mendoza, MD, Assistant Professor of Palliative Care.

**Submission Type:** Case Presentation (A clinical scenario with discussion of a patient)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Poster Abstract Presentation

### Abstract Title: A Case of Significant Life Prolonging Care of Advanced Colorectal Cancer -- Comprehensive, Integrated Palliative Care of a Young Adult Woman

#### Abstract

##### Introduction

Colorectal cancer is increasing in incidence and death rates in younger adults, but physicians may find it challenging to treat younger patients with advanced disease. This case report highlights the importance of palliative care integration into the treatment of young cancer patients. Case Presentation T.D., a 30-year-old caucasian woman, presented to an outside hospital in January 2021 for abdominal pain and nausea. After a prolonged workup, she was diagnosed in June 2021 with stage IV rectal adenocarcinoma with pelvic metastases complicated by recurrent transient partial small bowel obstruction (SBO), pain crises, and frequent hospital admissions in the setting of peritoneal carcinomatosis. Her social history included being a single mother of a 4-year-old child, unemployed, and with limited funding at the time of her cancer diagnosis. In September 2021, the palliative care team began a multifaceted approach to her care. With her and her family, palliative care discussed symptom management, advanced care planning, and goals of care while also coordinating palliative chemotherapy. A venting gastrostomy was placed which successfully improved quality-of-life and decreased admissions for SBOs. The patient was initially prescribed opioids for pain management, but they were ultimately inadequate. Chronic opioid use was a concern for exacerbating gastrointestinal dysmotility and contributing to her pain. Instead, an intrathecal pump was placed, successfully reducing her pain. Palliative care worked closely with the patient and her family during this time to provide extensive support, including assistance from social work and spiritual companionship from chaplains. As a result, the patient scored favorably given her condition on the Palliative Performance Scale and had a period of no admissions for several months. By May 2022,



the patient and her family agreed to initiate comfort care and was transferred to inpatient hospice where she passed away in June 2022. Diagnosis

T.D. was diagnosed with stage IV rectal adenocarcinoma with pelvic metastases.

Outcome

With the combined efforts of the multidisciplinary palliative care team, the patient lived for 12 months after initially being diagnosed. Palliative care offered substantial benefits to her quality-of-life and survival while amplifying her goals and wishes throughout the course of their care.

## References

### Learning Objectives

1. Describe the medical challenges of advanced stage colorectal cancer in younger patients
2. Enumerate the goals and benefits of palliative care for patients with advanced or severe diseases
3. Consult or refer patients to the palliative care team for holistic, integrated advanced disease treatment

## Abstract Reference Number: 100

Authors: Crystal Barroca, BS, BA

Co-authors: Joseph Phan, BS, Nova Southeastern University, Tampa, FL

**Submission Type:** Health System Science (Health care delivery, improving the quality of healthcare for patients and populations, and/or business of medicine)

**Submission Category:** Quality Health Care, Patient Safety & Best Practices

**Presentation Type:** Poster Abstract Presentation

**Abstract Title: A suggested model for the vulnerable phase of heart failure: assessment of risk factors, multidisciplinary monitoring, cardiac rehabilitation, and addressing the social determinants of health**

### Abstract

Background

The vulnerable phase of heart failure (30-90 days after hospital discharge) is associated with an increased rehospitalization and mortality rate. Appropriately aggressive measures for management in this period, although necessary, are not without risk to other organs and are inconsistently employed efficiently and effectively by medical providers. Due to the lack of a reliable algorithm during the vulnerable phase, we suggest a model to identify patient risk factors for exacerbations and medically manage them using a combination of disease management programs, remote patient monitoring systems, and cardiac rehabilitation to improve re-hospitalization rates and mortality. Methods

Our team conducted an analysis of English-written, peer-reviewed research through PubMed to gather current information on the vulnerable phase from the years 2017-2022.

Results Studies have found that cardiac rehabilitation and the implantation of a pulmonary arterial pressure monitor during the vulnerable phase reduces mortality and hospitalizations, improves quality of life, symptoms, and functional capacity. A structured heart failure disease management program during the vulnerable phase with patient education, medication reconciliation, multidisciplinary consultation, telephone follow-up within 48-72 hrs. of discharge, follow-up visits, and social determinants of health also prevent mortality and re-hospitalizations.

Conclusion It is our opinion that a structured approach with remote vital monitoring, wearable devices, cardiac rehabilitation, and algorithm-based follow-up will be best to identify patients at risk for decompensatory heart failure during the vulnerable phase and provide rapid treatment by an organized multidisciplinary team using home visiting programs and multidisciplinary heart failure clinic interventions.

## References

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### Learning Objectives

To establish a reliable model for managing the vulnerable phase (VP) of heart failure.

### Abstract Reference Number: 101

Authors: Magnus Chun, BS

Co-authors:

**Submission Type:** Unusual Case Presentation (a unique, rarely seen clinical scenario with discussion of a patient)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Oral Abstract Presentation (On-Site in Memphis ONLY - 10 minute presentation)

### Abstract Title: A Long Way from Home: An Interesting Case of MSSA Bacteremia from an Unknown Source

#### Abstract

**Introduction:** *Staphylococcus aureus* is the leading cause of hospital- and community-acquired bacteremia. **Case Presentation:** A 48-year-old immunocompetent man with hypertension was admitted for a 2-day history of abdominal pain radiating to the pelvis and dyspnea since recently flying domestically. Additional history revealed diaphoresis, dyspnea, nausea, vomiting, and non-bloody diarrhea 2-3 hours following a large meal upon arrival. Examination demonstrated diffuse abdominal tenderness to palpitation and distension. Of significant note, patient has had significant upper periodontal swelling for past few weeks. On admission, he was tachycardiac to 100s and was placed on 3 liters oxygen nasal cannula. CT chest identified peripheral wedge-shaped consolidations suggestive of multifocal infectious process consistent with septic emboli. EKG showed sinus tachycardia with S1Q3T3 pattern. Peripheral blood cultures were positive for methicillin-sensitive *Staphylococcus aureus* (MSSA). His hospital course was prolonged and complicated by orbital cellulitis and bilateral empyema. Additionally, he developed acute hypoxic respiratory failure causing him to decompensate and requiring intubation. Heparin drip was initiated after clinical suspicion of pulmonary emboli on admission. Patient was put on intravenous (IV) Ancef after initial positive blood culture for MSSA. Upon discharge, the final treatment plan for this patient is IV Ancef for an additional 6 weeks via PICC line infusion in his home state.

**Working Diagnosis:** The source of his MSSA bacteremia still remains unknown, but we suspect it was caused by his empyema secondary to septic emboli, prompting further investigation. The etiology of his septic emboli could have been: -Periodontal abscess, related to reported history of upper gum swelling of a few weeks prior to presentation;

-Infected upper-extremity hardware, as this patient carries history of ORIF;

-Infected intravenous line, a common source of hospital-acquired infection;

-Foodborne illness on arrival after prolonged immobility on a plane; or

-Endocarditis, though unlikely as echocardiogram was negative for valvular vegetations.

**Future Outlook:** MSSA bacteremia has frequently been reported to be associated with deep tissue infection, but rarely has it been associated with empyema secondary to septic emboli. It is important to determine the etiology and appropriate medical management for patients with MSSA bacteremia.

#### References

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M. Y. Lin, K. Rezai, and D. N. Schwartz, "Septic pulmonary emboli and bacteremia associated with deep tissue infections caused by community-acquired methicillin-resistant *Staphylococcus aureus*," *J Clin Microbiol*, vol. 46, no. 4, pp. 1553-5, Apr 2008, doi: 10.1128/JCM.02379-07.

### Learning Objectives

1. Review etiology and medical management of MSSA Bacteremia, in this case from empyema secondary to septic emboli.
2. Review etiologies and medical management of septic emboli.
3. Review possible complications of MSSA Bacteremia as seen in this case study.

### Abstract Reference Number: 102

Authors: Connor Maginnis, BS

Co-Authors: Cooper Root, BS, Medical Student, 2nd Year, University of Kansas School of Medicine, Kansas City, KS; Julie H. Schiavo, MLIS, Louisiana State University Health Science Center, New Orleans, La; Victoria K. Ierulli, MS, Department of Orthopaedic Surgery, Tulane University School of Medicine, New Orleans, La; Bryan Vopat, MD, Department of Orthopaedic Surgery, University of Kansas School of Medicine, Kansas City, KS; Mary K. Mulcahey, MD, Department of Orthopaedic Surgery, Tulane University School of Medicine, New Orleans, La

**Submission Type:** Clinical Science Presentation (A well-defined basic or clinical research project)

**Submission Category:** Surgery & Surgical Specialties

**Presentation Type:** Poster Abstract Presentation

### Abstract Title: Analysis of Graft Types used with Internal Brace Augmentation for ACL Reconstruction: A Systematic Review

#### Abstract

Background: New techniques are being created to decrease the failure rate of ACL grafts and prevent revision surgery. One such technique involves high strength suture tape, also referred to as an InternalBrace™ (Arthrex Inc.). Recent literature has highlighted the overall use of suture tape for ACL reconstruction, but no study has compared suture tape augmentation between graft types. The purpose of this study was to determine the potential benefits of augmenting with an internal brace depending on the type of graft (ie BPTB, quadriceps, hamstring). Methods: An online search of MEDLINE (Ovid), Embase, Scopus, Web of Science Core Collection, clinicaltrials.gov, and the Cochrane Central Register of Controlled Trials (CENTER) was performed in March 2022 to identify all articles related to suture tape augmentation of ACL grafts. Results: 926 studies were identified, 10 of which met inclusion criteria. 5 studies used hamstring tendon (HT) (50%), 3 used quad tendon (QT) (10%), 1 used bone-patellar tendon-bone (BPTB) (10%), and 1 study used both HT and QT grafts (10%). HT grafts augmented with suture tape decreased dynamic and peak elongation (15-56%), increased load to failure (20-77%) and increased initial and final dynamic stiffness (31-47%). There was no significant difference in post-operative physical exam findings, except suture tape augmented grafts had significantly less laxity post-surgery compared to hamstring tendon alone (0.8 vs 1.9 mm). QT grafts increased graft strength with normal graft incorporation and graft-to-bone healing at 6-month post-surgical histological assessment. One study showed 9 out of 11 patients (82%) returning to pre-injury activity level. There was no difference in negative outcomes, along with higher KOOS scores reported in suture tape augmented patients. The BPTB graft bone model decreased cyclic displacement by 31% ( $2.9 \pm 0.8$  mm), increased load ( $758 \pm 128$  N), and stiffness ( $156 \pm 23$  N/mm) in the suture tape augmentation group.

Conclusion: The findings of this study indicate that the use of HT, QT, and BPTB grafts with suture tape augmentation demonstrates an effective method for ACL reconstruction based on the biomechanical and clinical outcomes. Suture tape augmentation should be considered for the future of all ACL reconstruction procedures.

#### References

## Learning Objectives

- 1) Discuss the utility and advantages of suture tape augmentation with different graft types for ACL reconstruction
- 2) Consider suture tape augmentation as an effective alternative method for future ACL reconstructions

## Abstract Reference Number: 103

Authors: Aniekeme Etuk MD, MPH

Co-authors: Celestine Odigwe, MD, Internal Medicine, PGY3, Thomas Hospital, Infirmary Health, Fairhope, AL; Michael Pursley, MD, FACC, Chairman, Cardiology Division, Thomas Hospital, Infirmary Health, Fairhope, AL.

**Submission Type:** Unusual Case Presentation (a unique, rarely seen clinical scenario with discussion of a patient)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Oral Abstract Presentation (On-Site in Memphis ONLY - 10 minute presentation)

## Abstract Title: Incidental Finding of Thoracic Aortic Dissection in a Patient Post-Coronary Artery Bypass Graft Surgery

### Abstract

Introduction Thoracic artery dissection (TAD) is an uncommon but catastrophic condition manifesting as intramural bleeding in the medial layers of the thoracic aorta, initiated by an intimal tear, causing a false lumen, and expanding rapidly in the aorta. Uncontrolled hypertension is the commonest risk factor for developing TAD. Others include smoking, aortic aneurysms, inflammatory aortic diseases, inherited connective tissue diseases, trauma, cardiac surgeries, and illicit drug use. Most patients present with severe chest or back pain, and asymptomatic cases are primarily due to underlying collagen vascular disease. We present a unique case of TAD in a patient discovered incidentally post-CABG.

### Case Presentation

An 82-year-old male with history of CAD status post recent three-vessel CABG four months prior presented to the ER following an abnormal chest CT scan finding of aortic dissection. He was undergoing evaluation for a possible malignancy by an oncologist based on an MRI finding of some bony abnormalities. The patient was asymptomatic and on physical examination, his vital signs were within normal limits for age. Uncontrolled hypertension, genetically mediated connective tissue disorder, familial thoracic aortic aneurysm/dissection, amongst others were taken into consideration as possible aetiologies; however, evaluations were negative for these conditions. The patients' blood counts were within normal range. EKG was negative for ST segment changes and cardiac enzymes were normal. His proBNP was elevated at 635 pg/ml (0 – 450), but this was not significant considering his age. An ECHO showed a normal ejection fraction.

### Final/Working Diagnosis:

A diagnosis of Thoracic aortic dissection secondary to CABG was made.

### Management/Outcome:

The patient was managed conservatively in the medical ICU, holding his anticoagulants and antiplatelets while monitoring his hematocrit and hemoglobin levels. The cardiologist and cardiothoracic surgeons were consulted to evaluate the patient, and no surgical recommendation was made as the repeat CT scan of the chest two days later was stable, and the patient remained asymptomatic. He was transferred from the medical intensive care unit to the medical ward before his final discharge. Follow-up:

The patient will be followed up in one week, one month, six months, and one-year intervals with plans to escalate management if necessary.

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### Learning Objectives

- 1) Describe aortic dissection as a rare but lethal complication of coronary artery bypass graft surgery.
- 2) Demonstrate that aortic dissection following coronary artery bypass graft surgery can be asymptomatic.

### Abstract Reference Number: 104

Authors: Carly Stevens, BS

Co-authors: Katie Merk, Undergraduate Student, Tulane University, New Orleans, LA; Victoria Ierulli, MS, Research Editor, Department of Orthopaedic Surgery, Tulane University School of Medicine, New Orleans, LA ; Mary K. Mulcahey, MD, Assistant Program Director, Department of Orthopaedic Surgery, Tulane University School of Medicine, New Orleans, LA

**Submission Type:** Clinical Science Presentation (A well-defined basic or clinical research project)

**Submission Category:** Surgery & Surgical Specialties

**Presentation Type:** Poster Abstract Presentation

### Abstract Title: Analysis of Social Media Posts that Promote Women Surgeons

#### Abstract

**Background/Knowledge Gap:** Social media platforms, such as Instagram and Twitter, have rapidly grown over the past two decades and serve as powerful tools to promote female surgeons. The purpose of this study was to analyze the content, interaction, and use of posts related to women surgeons on Instagram and Twitter, with specific analysis of female orthopaedic surgeon related content. **Methods/Design:** A retrospective search of Instagram and Twitter between the dates March 14, 2022 and June 16, 2022 was conducted using the hashtags, #womeninortho, #womeninorthopedics, #ilooklikeasurgeon, #womensurgeons, and #womeninsurgery. On Twitter, additional searches of #orthotwitter in combination with #ilooklikeasurgeon, #womensurgeons, and #womeninsurgery were performed. Once identified, posts were analyzed for the hashtag used, number of likes, comments, and retweets (Twitter only), source type, post type, and medical specialty. Descriptive statistics were used to analyze the data.

**Results/Findings:** Over the 3-month period, a total of 3,248 posts were identified that included 1,669 (54.4%) Instagram posts and 1,639 (49.5%) Twitter posts. For non-orthopaedic specific hashtags, the overall majority of posts and posts on Instagram were made by general (32.3%, 28.9%), plastic (12.7%, 22.1%), and orthopaedic surgeons (8.3%, 7.8%). On Twitter, general surgeons tweeted the most (35.6%), followed by orthopaedic surgeons (8.8%). Instagram also had a greater mean number of likes and comments per post than Twitter. For orthopaedic specific hashtags, #womeninortho was used more than #womeninorthopedics on both platforms (78.0% vs. 22.0%,  $p < .001$ ). On #orthotwitter, #ilooklikeasurgeon was used more than #womeninsurgery and #womensurgeons (75.0% vs. 23.6% vs. 1.4%,  $p < .001$ ).

**Conclusions/Implications:** This study demonstrated that both Instagram and Twitter are regularly used to promote women surgeons. With the current lack of female representation in surgery, social media can connect others with similar interests. Instagram is the preferred platform of physicians for promoting women surgeons via personal

and outcome-based content. Female orthopaedic surgeons should continue to use the preferred hashtag, #womeninortho, to maximize posts of related content. By promoting women surgeons on social media, practicing surgeons can converse, collaborate, and provide mentorship to the next generation of surgeons.

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## Learning Objectives

1. Instagram is more prominently used than Twitter by physicians for promoting women surgeons.
2. Women surgeons more commonly use personal and outcome-based content to promote themselves on Instagram.
3. Female orthopaedic surgeons should use the hashtag #womeninortho to promote their practice and provide mentorship to future surgeons.

## Abstract Reference Number: 105

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Victoria K. Ierulli, Research Assistant

Michael J. O'Brien, MD, Orthopaedics

**Submission Type:** Clinical Science Presentation (A well-defined basic or clinical research project)

**Submission Category:** Surgery & Surgical Specialties

**Presentation Type:** Poster Abstract Presentation

### Abstract Title: Patient Preferences of Social Media Content by Sports Medicine Surgeons

#### Abstract

**Introduction:** Healthcare provider presence on social media is growing across all platforms, including Instagram, Twitter, Facebook, and YouTube. The purpose of this study was to provide updated information on which sports medicine patients are most influenced by provider presence on social media, as well as their preferences in social media platforms and content, to help guide future provider content. **Methods:** An anonymous online, voluntary, self-administered questionnaire containing 13 questions was distributed to patients (n=159) who had a clinic visit with one of two orthopaedic sports medicine surgeons at the same institution between November 2021 and January 2022. Descriptive statistics were used to analyze the data of 159 respondents.

**Results:** A total of 159 responses were received for a response rate of 29.5%. The most common social media platforms used by patients were Facebook (110; 84%), YouTube (69; 53%), and Instagram (61; 47%). Most participants indicated that it did not make a difference to them if their sports medicine surgeon was on social media (N=99, 62%), and they indicated they would not travel further to see a physician who was active on social media (N=85, 54%). Compared to other age groups, significantly more respondents over the age of 50 years used Facebook to follow their physicians (47 of 60, 78%,  $p = .012$ ). Seventy-eight (50%) patients noted that they were interested in seeing medical facts, while 72 (46%) were interested in seeing educational videos on their physician's social media page. **Conclusion:** Patients frequently use the internet to find answers to their health care questions. In this study, we found that sports medicine patients prefer to see educational videos and medical facts from their surgeons on social media, most predominantly on Facebook. Sports medicine surgeons may use these findings to evolve their social media presences to fulfill patient interest in education about sports medicine injuries and recovery.

#### Objectives

1. To determine sports medicine patients' overall opinions on surgeon presence on social media.
2. To describe sports medicine patients' social media platform preferences (e.g. Facebook, Instagram, etc.)
3. To describe sports medicine patients' social media content preferences (e.g. educational videos, medical facts, etc.).

#### References

#### Learning Objectives

##### Objectives

1. To determine sports medicine patients' overall opinions on surgeon presence on social media.
2. To describe sports medicine patients' social media platform preferences (e.g. Facebook, Instagram, etc.)
3. To describe sports medicine patients' social media content preferences (e.g. educational videos, medical facts, etc.).

## Abstract Reference Number: 106

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**Submission Type:** Clinical Science Presentation (A well-defined basic or clinical research project)

**Submission Category:** Surgery & Surgical Specialties

**Presentation Type:** Oral Abstract Presentation (On-Site in Memphis ONLY - 10 minute presentation)

**Abstract Title: Comparing post-operative functional outcomes after quadriceps or BTB (bone patellar tendon bone) anterior cruciate ligament (ACL) reconstruction**

### **Abstract**

**Background:** Anterior Cruciate Ligament (ACL) reconstructions are performed using a tendinous graft that mirrors the properties of the ACL. While hamstring and bone-patella tendon-bone (BTB) are traditionally the autografts used for ACL reconstruction, recently, the quadriceps tendon autograft has received significant interest due to its clinical stability and low harvesting complications. This study aims to compare post-operative knee stability, functional outcomes, and complications following ACL reconstruction using BTB versus quadriceps tendon graft. **Methods:** PubMed, Embase, and Cochrane Library were searched for studies published after 2002. Studies which were randomized controlled trials (RCT), included patients who underwent ACL reconstruction using BTB or quadriceps tendon graft (all soft tissue or B-QT), and reported measures of post-operative stability and functional outcomes were included in this study. Studies that were not written in English, analyzed animals or cadavers, were not RCTs, or used other grafts (i.e., hamstring) were excluded.

**Results:** Six studies were included in this systematic review. Two studies found no significant difference in performance outcomes or complications between quadriceps or BTB graft use. One study found that quadriceps grafts exhibit improved knee functional status compared to BTB grafts. Another study found that quadriceps grafts result in a significantly reduced Quadriceps Index post-operatively compared to BTB recipients but that no differences exist in post-operative quadriceps strength. An additional study found that outcomes of quadriceps tendon and BTB grafts are equivalent, but anterior knee pain is less severe with quadriceps tendon utilization. Furthermore, one study revealed overall IDKC score was reported as normal significantly more often in BTB graft recipients and that donor site morbidity was greater in quadriceps graft recipients.

**Conclusions:** Patients undergoing either BTB or quadriceps-transfer for ACL reconstruction both reported improved post-operative knee stability and functional outcomes. No statistically significant difference was found in complications requiring reoperation. This study consistently demonstrated that revision rates secondary to graft failure were not statistically significant between patients undergoing either BTB or quadriceps transfer. The quadriceps tendon graft is comparable in utility to the BTB graft, and preferences of the orthopaedic surgeon performing the procedure will ultimately determine graft selection on a case-by-case basis.

### **References**

#### **Learning Objectives**

- Both BTB and quadriceps grafts improve knee function after ACL tendon reconstruction.
- There is no statistically significant difference in post-operative functional outcomes or range of motion following ACL reconstruction with regards to BTB or quadriceps graft choice.
- Choice of BTB versus quadriceps grafting is ultimately dependent on orthopaedic surgeon training and preference.

#### **Abstract Reference Number: 107**

Authors: Malia Steele, BS, MPH, MS



Co-authors: Tessa R. Lavorgna, BS, Medical Student 3rd Year  
Samantha O'Connell, Researcher  
Michaela Stamm, MS, Researcher

**Submission Type:** Clinical Science Presentation (A well-defined basic or clinical research project)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Poster Abstract Presentation

## **Abstract Title: Risk Factors for Shoulder Injuries in Female Athletes Playing Overhead Sports: A Systematic Review**

### **Abstract**

**Introduction:** Sports involving overhead motion put substantial biomechanical demands on the shoulder. The purpose of this systematic review was to determine risk factors for shoulder injuries in female athletes who play overhead sports. The secondary aim was to evaluate strategies to reduce the risk of shoulder injuries in female athletes.

**Methods:** A systematic electronic search of the literature was performed according to PRISMA guidelines. "Overhead injuries/Shoulder AND female athletes AND Risk Factors" were terms searched in PubMed, Tulane Matas Library Search Engine, and Google Scholar. Inclusion criteria included publications dated between 2000-2021, age range from 15 to 35 years old, and cited prevalence of shoulder injuries in female athletes in overhead sports. **Results:** The initial search identified 1574 studies, 23 of which met inclusion criteria and included in the study. Volleyball with 6 of 23 total articles, (26%) was most common sport with shoulder injuries, followed by softball (5; 22%), swimming (5; 22%), gymnastics (4; 17%), tennis (3; 13%), water polo (2; 8%) and basketball (1; 4%). There were six risk factors (RF) described among the 23 studies. 9 of 23 (39%) studies identified dominant shoulder as a RF for sustaining injury (average Risk Ratio (RR) of 2.04), while 6 (26%) studies cited volume of repetition & overuse as a prominent RF (RR of 1.45). Amount of time participants spent in the sport was also a RF (RR of 2.92), suggesting a longer time playing led to higher incidence/risk of suffering shoulder injury. A major expressive force in overhead sports is External Rotation (ER) and Internal Rotation (IR). Results showed an increased in ER ROM on the dominant side with an average of 112.66 degrees compared to IR ROM on the dominant side of 52.44. **Conclusion:** This systematic review demonstrates important risk factors associated with overhead sports for female athletes. Dominant shoulder, volume load and overuse, time in sport, and prior injury all are risk factors associated with shoulder injuries in female athletes who play overhead sports. Identifying long-term differences between female athletes with and without shoulder injuries can serve as the basis for developing appropriate injury prevention programs.

### **References**

#### **Learning Objectives**

1. To determine what risk factors are associated with shoulder injuries in female athletes who play or have played overhead sports.
2. Evaluate the magnitude and differences between external and internal rotation and the impact both have on causing overhead injuries in female athletes.
3. To assess preventative strategies to prevent and reduce the amount of shoulder injuries in female athletes who play overhead sports

## **Abstract Reference Number: 108**

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Kent Chevli, MD, Program Chair Department of Urology, University at Buffalo, Western New York Urology Associates, Buffalo, NY.

**Submission Type:** Health System Science (Health care delivery, improving the quality of healthcare for patients and populations, and/or business of medicine)

**Submission Category:** Quality Health Care, Patient Safety & Best Practices

**Presentation Type:** Poster Abstract Presentation

**Abstract Title: Physician Retirement Planning in the Post-COVID-19 Pandemic Era: A Multidisciplinary Survey of Physicians in a Large Regional Healthcare System**

**Abstract**

**Background**

The full toll of the COVID-19 pandemic on frontline healthcare workers is still unfolding, but early data suggests it may be exacerbating physician burnout and accelerating physician retirement decisions. According to Doximity's 2021 "Physician Compensation Report" nearly three-quarters of physicians reported being overworked and 22% were consequently considering early retirement. We aimed to assess how the COVID-19 pandemic may have affected retirement planning of physicians within a large regional healthcare organization.

**Methods**  
280 hospital physicians were distributed electronic surveys with the primary assessment of their perceived year of retirement in 2019 followed by which year they perceived themselves retiring post-COVID 19 pandemic. Secondary questioning was an optional response indicating their top 3 factors contributing to their change in retirement date; government mandates, insurance regulations/documentation, hospital system regulations, clinical duties, change in income, health, weather, family, or other. These responses were then compared to a pre-COVID physician market assessment performed in 2019. Using descriptive statistics, we compared expected changes within the hospital system and performed counts for the reported reason for change. **Results**

263 physicians responded, 32% of overall respondents (n=85) changed their proposed retirement year either earlier or later. 70.6% of respondents who changed their retirement date (n=60) expected to retire earlier than prior reporting, while 29.4% (n=25) expected to retire later. Family obligations (n=62), augmenting clinical duties (n=53), government mandates (n=47), and loss of reimbursement (n=45) were amongst the most popular citations for change-related reasoning. Of those expected to retire early, they advanced their retirement age by an average of 5.25 years. The 2019 physician assessment data predicted a 10.9% deficit in the hospital system work force by 2024. Our survey demonstrated a further net deficit of 5.3% of physicians advancing their retirement before 2024 and a total deficit of 16.2% in the local/regional physician work within 2 years of the COVID pandemic. **Conclusions**  
Our findings are consistent with pandemic-related factors exacerbating early retirement planning and inflating our region's expected future labor deficit. Further labor assessments of physician retirement planning are warranted on a larger scale study to confirm a worrisome trend in the national physician shortage.

**References**

Doximity. (2021, December). 2021 physician compensation report - c8y.doxcdn.com. 2021 Physician Compensation. Retrieved July 2022, from <https://c8y.doxcdn.com/image/upload/v1/Press%20Blog/Research%20Reports/Doximity-Compensation-Report-2021.pdf>

**Learning Objectives**

Identify factors leading to early retirement of physicians in the post COVID era.

**Abstract Reference Number: 109**

Authors: Shira Rosoph, BS

Co-authors: Amanda Duggan, BSN, BS, Medical Student, St. George's University/Center for Haitian Studies, Miami, FL.

**Submission Type:** Case Presentation (A clinical scenario with discussion of a patient)

**Submission Category:** Surgery & Surgical Specialties

**Presentation Type:** Poster Abstract Presentation

**Abstract Title: Conservative Management of a Patient with Pneumoperitoneum following Cardiopulmonary Resuscitation**

**Abstract**

Introduction:

Pneumoperitoneum is a rare complication of cardiopulmonary resuscitation (CPR) that may occur due to rupture of abdominal viscera, diaphragmatic air leak, or gastric distention [1]. Proposed mechanisms for visceral injury during CPR include transmitted pressure through the diaphragm during chest compressions, incorrect hand placement, increased susceptibility of abdominal organs to injury due to ischemia, forceful delivery of rescue breaths, and esophageal intubation [1]. Although surgical intervention is the traditional treatment for pneumoperitoneum, conservative management is being proposed as a safe alternative for patients with pneumoperitoneum without peritonitis and may be the preferred method of treatment in patients post-cardiac arrest, who have high rates of morbidity and mortality with surgical intervention [2,3,4].

Case Presentation: Our patient is a 64-year-old male with a history of chronic obstructive pulmonary disease and depression who presented to the emergency department via ambulance for acute respiratory distress, altered mental status, nausea and vomiting. Upon endotracheal intubation, he experienced pulseless electrical activity and CPR was performed. The following day, imaging studies were obtained; chest x-ray revealed no evidence of rib fracture or pneumothorax while abdominal CT showed no signs of perforated viscus. However, the abdominal CT scan was positive for pneumoperitoneum resulting in a consultation to general surgery. They performed a physical exam which showed no signs of rebound tenderness or rigidity, however, his condition was critical as he was intubated with bilateral air entry, on multiple sedatives, a norepinephrine infusion and IV fluids. Due to the high risk of mortality in this patient, as he was status post-cardiac arrest and no positive signs of peritonitis, surgery elected to treat his pneumoperitoneum conservatively with observation and imaging.

Final/Working Diagnosis: Pneumoperitoneum, status post-cardiac arrest

Management/Outcome: A follow-up abdominal CT was ordered one day later and it showed that the pneumoperitoneum was reducing in size and there was no extravasation of contrast medium, supporting the decision to undergo conservative management rather than surgical intervention. 1. Ram P, Menezes RG, Sirinvaravong N, et al. Breaking your heart—A review on CPR-related injuries. *The American Journal of Emergency Medicine*. 2018;36(5):838-842. doi:10.1016/j.ajem.2017.12.063

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**References**

**Learning Objectives**

- 1) Discuss the mechanisms of injury that may result in pneumoperitoneum following CPR.
- 2) Discuss in which cases conservative management is appropriate for pneumoperitoneum following CPR rather than surgical intervention.
- 3) Be able to identify pneumoperitoneum on CT scan.

## Abstract Reference Number: 110

Authors: Nicholas Klempf, BBA

Co-authors:

**Submission Type:** Unusual Case Presentation (a unique, rarely seen clinical scenario with discussion of a patient)

**Submission Category:** Mental Health

**Presentation Type:** Poster Abstract Presentation

### Abstract Title: Distinguishing Between Postictal Mania and Bipolar Disorder in Individuals with Epilepsy

#### Abstract

##### Introduction

A number of studies have examined the occurrence of affective disorders in the context of epilepsy, but these studies generally focus on depression, and few have focused on mania.<sup>1</sup> There are case reports of patients with epilepsy experiencing postictal manic symptoms. In this situation, there is generally a four-sequence period of lucidity, mania, hypomania and remission.<sup>2</sup> In individuals with epilepsy, the prevalence of bipolar disorder is only 1.5%, whereas the prevalence of postictal mania is 11.8%.<sup>3,4</sup> This case report reveals a patient with past medical history of epilepsy with no reported psychiatric history of depression or mania who presented with two recent episodes of mania with no recent seizures reported by the patient or his family who had closely observed him for the preceding two months.

##### Case Presentation

A 32 year old male with a history of epilepsy presented to the psychiatric emergency department with symptoms of decreased sleep, elevated mood, flight of ideas, pressured speech, bizarre behavior and grandiosity. Collateral from the family revealed what was suggestive of a recent manic episode six weeks before his current admission. His current symptoms were more severe than those of his previous episode and had been occurring for more than one week and causing significant functional impairment.

##### Management, Outcome and Follow-up

The patient tested negative on urine drug screen. A brain MRI was ordered to assess for a neurological etiology, but the MRI was normal. The patient's epilepsy was currently being managed with phenobarbital. Initially, the patient had limited insight into his mania, but after his second day of admission he agreed to try a mood stabilizer, specifically valproic acid. The patient responded well to the mood stabilizer with a full remission of manic symptoms in approximately one week. The patient was scheduled to follow up with his primary care physician, psychiatrist and neurologist post-discharge.

**Final/Working Diagnosis**

Epilepsy with Bipolar Disorder Type I

##### Learning Points

It is important to distinguish between postictal induced mania and true bipolar disorder in individuals with epilepsy, as it affects the diagnosis and treatment.

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## Learning Objectives

### Learning Objectives

1. To discuss the current medical literature on affective disorders among individuals with epilepsy
2. To describe the treatment to acutely stabilize a patient with epilepsy and uncontrolled mania
3. The importance of ruling out a postictal state in individuals with epilepsy before considering bipolar disorder

## Abstract Reference Number: 111

Authors: Taylor Stamey, BA,MA

Co-authors: Oluwafemi Opelami, BA, medical student, 2nd year, Brody School of Medicine, Greenville, NC; Janet Moye, PhD, RN, interesting director, Community Crossroads Center, Greenville, NC

**Submission Type:** Community Project (A personal experience working on a community-based initiative to improve the health of a specific population. Student/resident applicant(s) must have served in a leadership role in the planning and execution of the project)

**Submission Category:** Public Health & Environmental Medicine

**Presentation Type:** Poster Abstract Presentation

## Abstract Title: VAXXED & BOOSTED: Increasing COVID-19 Vaccination Rates Through Convenience of Vaccination Location

### Abstract

Pitt County is ranked 48th out of the 100 counties in North Carolina for COVID-19 vaccination rates, with only 53.8% of the population fully vaccinated. West Greenville, located in Pitt County, is historically of lower economic status, leading to poorer social determinants of health. The goal of the VAXXED & BOOSTED campaign is to increase COVID-19 vaccination rates in West Greenville by bringing the vaccine to locations that socioeconomically disadvantaged residents of West Greenville frequently visit.

The VAXXED & BOOSTED vaccination events were hosted at the Community Crossroads Center and the JOY Soup Kitchen. The Community Crossroads Center is the homeless shelter that serves Pitt County. The JOY Soup Kitchen provides free meals to residents of West Greenville and is conveniently located on the Greenville bus line. Prior to these events, community ambassadors were utilized in order to educate and encourage community members to get vaccinated. At five events hosted to date, 52 people have received their COVID-19 vaccine: 13 people received their first vaccine, 4 received their second, and 35 received their booster. Out of 29 people surveyed, 24 found the use of the community ambassadors helpful (82.8%) and 15 interacted with a community ambassador before the event they attended (51.7%). The education provided at the event influenced the decision of 22 people (75.9%), 24 learned something new at the event (82.8%), and 27 plan to encourage others to get vaccinated (93.1%).

Moving forward, we plan to also offer the flu vaccine. There has been initial interest with many people stating they have been unable to get the flu vaccine due to lack of transportation, and we hope that by alleviating transportation barriers to getting vaccinated, we can increase vaccination rates. Our next event will be a vaccination block party hosted at the Andrew A. Best Freedom Park using the Servire mobile unit, and both the COVID-19 and flu vaccines will be offered.

### References

### Learning Objectives

1. Describe barriers to vaccination
2. Understand mechanisms to relieve barriers to vaccination
3. Understand the importance of vaccinations

## Abstract Reference Number: 112

Authors: Sukhmanjot Kaur, MD

Co-authors: Sukhmanjot Kaur, MD, Internal Medicine, PGY3, North Alabama Medical Center, Florence, AL;

Ibimina Dagogo-Jack, MD, Internal Medicine, PGY3, North Alabama Medical Center, Florence, AL;

Sangeetha Isaac, MD, Internal Medicine, PGY3, North Alabama Medical Center, Florence, AL;

Khushdeep Chahal, MD, Program Director, North Alabama Medical Center, Florence, AL.

**Submission Type:** Unusual Case Presentation (a unique, rarely seen clinical scenario with discussion of a patient)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Poster Abstract Presentation

### **Abstract Title: Respiratory decompensation masquerading Hiatal Hernia and Gastric Volvulus**

#### **Abstract**

**INTRODUCTION:** Common symptoms of hiatal hernia include epigastric or substernal pain or postprandial fullness, nausea, retching and acid reflux. The incidence of hiatal hernia presenting with only symptoms of dyspnea and orthopnea is reported to be unusual and is sparsely reported in the literature. Here we present one such case in which dyspnea was initially attributed to chronic obstructive pulmonary disease (COPD) and the diagnosis was revised during readmission.

**CASE PRESENTATION:** An 82-year-old female presented with a one-month history of exertional dyspnea and orthopnea. She had been a lifelong passive smoker and had worked in a sewing factory. On admission, her vitals were remarkable for hypoxia with saturation being 87% on room air. Physical exam revealed bilateral mild crepitation on chest auscultation. Lab investigations were unremarkable. Chest x-ray revealed cardiomegaly and a large hiatal hernia. CTA ruled out pulmonary emboli but revealed a large hiatal hernia and changes consistent with COPD. She was admitted with a diagnosis of COPD exacerbation and was managed with oxygen supplementation, steroids, breathing treatments, and antibiotics, with resultant improvement in symptoms and subsequent discharge from the hospital. Outpatient pulmonary function testing showed mild airflow obstruction. Three weeks later, she presented with worsening symptoms of orthopnea, frequent nighttime awakenings and throat clearing. On examination, vitals were significant for hypoxia with saturation 87% on room air. Cardiopulmonary exam revealed bilateral diffuse crackles. Lab investigations showed leukocytosis 12000/mm<sup>3</sup>, BNP 656. Chest x-ray revealed infiltrate involving right lung base and a large hiatal hernia. A coronary angiogram showed non-obstructive coronary artery disease without any evidence of heart failure.

**Final diagnosis/Follow up:** With this additional information, her diagnosis was revised to that of respiratory decompensation due to mechanical complication of large hiatal hernia, with possible nocturnal aspiration leading to chronic lung inflammation. She underwent upper gastrointestinal series which revealed a very large hiatal hernia without evidence of obstruction, partial organo-axial volvulus, and severe esophageal dysmotility.

**Management/Follow up:** In view of increased risk for torsion and worsening volvulus, the patient was transferred to tertiary center for surgical evaluation.

#### **References**

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Unexpected cause of respiratory distress

Joana Sotto Mayor, Ana Lages, Sofia Esperança, Antonio Oliveira e

Silva <http://dx.doi.org/10.1136/bcr-2015-213408>

Karan A, Guo HJ, Ng K, Izzo C. A Breathtaking Hernia: A Giant Hiatal Hernia Masquerading as Poorly Controlled

Asthma. *Cureus.* 2022 Feb 16;14(2):e22268. doi: 10.7759/cureus.22268. PMID: 35350499; PMCID: PMC8933146.

#### **Learning Objectives**

1. Describe hiatal hernia as a condition that causes upper part of the stomach, located below the diaphragm to bulge through the esophageal hiatus of the diaphragm into the thorax. In Type 1 hiatal hernia, the gastroesophageal junction slides along with a part of the stomach.
2. Discuss that >95% of hiatal hernias are Type 1 and rarely cause symptoms except reflux. Rarely, respiratory symptoms can be observed in older patients. This is due to chemical irritation of the upper gastrointestinal tract which leads to micro-aspiration into the respiratory tract, especially in recumbent position. Additionally, a large hiatal hernia can cause an extrinsic obstruction of the airway and compression within the thorax, exacerbating respiratory symptoms as seen in this case.
3. Diagnose large hiatal hernia in a patient mimicking cardiopulmonary disease related signs and symptoms like orthopnea, paroxysmal nocturnal dyspnea, acute type 1 respiratory failure.

### **Abstract Reference Number: 113**

**Authors:** Karthika Kirthika HBS; MD; MPH

**Co-authors:** Kirthika Venkatesan, M.D, MPH, International Medical Graduate, Caribbean Medical University School of Medicine, Willemstad, Curaçao; Sukrita Menon, M.D, Radiology, PGY1, State University of New York Upstate Medical University, New York, United States; Nisha Nigil Haroon, M.D, Department of Endocrinology and Internal Medicine, Northern Ontario School of Medicine, Ontario, Canada; Varna Varghese, M.B.B.S, International Medical Graduate, Azeezia Institute of Medical Science and Research, Kerala, India; Anuja Ashok, M.B.B.S, International Medical Graduate, Government T.D Medical College Alappuzha, Kerala, India; Jafrikh Thamara Kunnath, M.B.B.S, International Medical Graduate, Government Medical College Kozhikode, Kerala, India; Teresa Varghese, M.D, Internal Medicine, PGY1, Wellstar Spalding Regional Hospital, Georgia, U.S.A.

**Submission Type:** Clinical Science Presentation (A well-defined basic or clinical research project)

**Submission Category:** Bioethics & Medical Education

**Presentation Type:** Poster Abstract Presentation

### **Abstract Title: U.S.A Residency 2022 Match Survey for International Medical Graduates: A Survey-Based Study**

#### **Abstract**

**Background:** International Medical Graduates (IMGs) represent a quarter of the physician workforce. They are integral to the U.S healthcare system contributing substantially to primary care disciplines. NRMP data suggests an average IMG match rate of 56.7% and 59.4% in 2021 and 2022. Despite having good scores, the low match rate compared to U.S medical graduates calls for critical analysis of the elements determining the match process outcome. **Goals:** We aim to demonstrate elements contributing to a successful residency match, identify IMG-friendly specialties, potential barriers and/or facilitators, and provide a subjective analysis of skills to ace interviews. **Methods:** HIPAA-compliant anonymous virtual surveys were distributed to participants through social media platforms among matched IMGs in the 2022 residency cycle. The survey consisted of 20 questions assessing the factors and attributes for successful matching. **Key Findings:** 22 participants completed the survey (77%-female, 18%-male, 5%-non-binary/third gender), of which the majority (64%) were between 25-30 years of age. 55% required a J-1 and 9% required an H1-B visa, as opposed to 36% who did not require a visa. As for the match statistics, 68% matched their first choice and a total of 9% participated in couple matching. 59% used professional guidance for residency applications. On average, 94% reported that acing interviews was crucial to matching, followed by ERAS application (89%), letters of recommendation (88%), and personal statements (84%). Overall, interpersonal skills (89%), communication (88%), problem-solving (83%), and clinical skills (81%) were deemed important for successful matching. **Conclusion:** Acing interviews, a well-rounded ERAS application, letters of recommendation, and personal statements are critical for match. The findings of this study can help students and career advisers establish suitable application tactics, raise awareness about characteristics linked with failed match outcomes, and act as a stimulus for additional research.

#### **References**

## Learning Objectives

1. Identify gaps relating to residency match for international medical graduates
2. Demonstrate factors crucial for residency match
3. Discuss methods to alleviate barriers to match

## Abstract Reference Number: 114

Authors: yara khalifa, DO, MPH

Co-authors:

**Submission Type:** Unusual Case Presentation (a unique, rarely seen clinical scenario with discussion of a patient)

**Submission Category:** Surgery & Surgical Specialties

**Presentation Type:** Poster Abstract Presentation

## Abstract Title: Intussusception Secondary to Heterotopic Pancreas

### Abstract

background

Heterotopic Pancreas (HP) is a rare embryological deformity that is characterized by pancreatic growth that is lacking vascular and anatomical connection to the main pancreas (1). There are two theories for its proposed mechanism: the poor position and metaplasia theories (1, 3). The first postulates that a portion from the primitive pancreas is left behind during embryological intestinal rotation. The second poses a foci of metaplasia that migrates independently during embryogenesis (1). Regardless, the incidence is 0.25-13.7% worldwide (3). Most are found on postmortem autopsy but can present as melena, vomiting, abdominal pain, constipation/diarrhea and GERD (2, 3). Although the malignant potential of an ectopic pancreas is less than the normal one, surgical resection is the only curative treatment (4). Future complications include pancreatitis, pseudo-cyst propagation and malignancy (4).

case presentation We present a case of a 27-year-old German-Cuban male who presents to the ED with intermittent sharp lower abdominal pain for the past 2 months. Symptoms have been progressively getting worse and associated with nausea, non-bloody, non-bilious vomiting, and non-bloody diarrhea. CT abdomen/pelvis without contrast (figure 3), Urinalysis, CBC, CMP was performed on admission and confirmed an ileo-ileal intussusception and mild anemia. Patient was referred to general surgery where an exploratory laparotomy showed an 8 cm tan, hemorrhagic friable mass within the small bowel lumen with three enlarged mesenteric lymph nodes. A fresh frozen section was taken and confirmed to be non-malignant, ulcerated pancreatic tissue (figure 1). Patient recovered nicely post-operatively and was discharged.

discussion This case report highlights a unique etiology of intussusception. Adult account for 5% of total number of Intussusceptions, with intestinal locations being very rare (3). This additional pancreas is also called aberrant, choristoma, heterotopic, or accessory (1, 4). The patient's pathology report showed the uncommon Type 1 Heinrich criteria (Figure 2). Furthermore, its ileal location is also unusual (2). Although an uncommon diagnosis, it should be considered in all patients who present with an obstruction. This patient presented with a larger lesion that acted as a lead point and progressively worsened until the patient obtained long-term health insurance and sought treatment.

conclusion

This case represents a rare but interesting differential. HP is usually asymptomatic and found during surgery for unrelated reasons or post-mortem. While most lesions are subserosa, this lesion was intraluminal hence why it presented with symptoms. It is truly unique to have encountered this case.

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2. DOI: 10.30699/IJP.14.2.180
3. DOI: 10.3748/wjg.15.3964



4. DOI: 10.21037/acr.2019.07.05
5. DOI: 10.12998/wjcc.v10.i7.2261
6. DOI: 10.1016/j.ijscr.2018.03.023

### **Learning Objectives**

describe what a heterotopic pancreas is.  
describe the two theories behind its pathophysiology.  
describe the appropriate workup and treatment

### **Abstract Reference Number: 115**

Authors: Joseph Gaines, BBA Banking and Finance

Co-authors: Sarah Bracher, Medical Student Year 4, Medical College of Georgia, Augusta, GA; Scott Forseen, MD, Neuroradiology, Medical College of Georgia, Augusta, GA

**Submission Type:** Case Presentation (A clinical scenario with discussion of a patient)

**Submission Category:** Medicine & Medical Specialties

**Presentation Type:** Oral Abstract Presentation (10 minute presentation)

### **Abstract Title: Spondylodiscitis Due to Rare Pathogen *Mycobacterium heckeshornense***

#### **Abstract**

##### **Introduction:**

Infectious spondylitis, or vertebral body infection, is a common sequelae of tuberculosis infection. While *Mycobacterium tuberculosis* is the most common cause of infectious spondylitis, other mycobacterial pathogens can cause this disease. In the case presented here, *M. heckeshornense*, an extremely rare nontuberculous mycobacterium (NTM), was identified as the pathogen affecting our patient. This is only the third reported case of spondylodiscitis caused by *Mycobacterium heckeshornense*. Clinicians should be aware of this diagnosis as treatment regimens differ for this form of the disease.

##### **Case Presentation:**

A 61-year-old male presented with a 2-month history of upper thoracic back pain. His past medical history included HIV, hepatitis C, lung adenocarcinoma, and diabetes mellitus. Patient was afebrile with normal vital signs. Physical exam showed thoracic midline spinal tenderness with overlying erythema and 3+ hyperreflexia throughout. Labs showed low/normal WBC, elevated ESR, CD4 count of 327, and negative blood cultures. CT of the thoracic spine showed a destructive mass lesion centered at T4-T5. MRI of the thoracic spine demonstrated extensive T4 and T5 vertebral body enhancement, marrow edema, and focal bony erosions highly concerning for discitis osteomyelitis. An associated paravertebral abscess with epidural phlegmon was also identified. Differential diagnosis included tuberculous spondylitis, pyogenic spondylitis, brucellar spondylitis, osteoporosis, metastasis, multiple myeloma, and lymphoma.

##### **Final/Working Diagnosis:**

Nontuberculous spondylodiscitis

##### **Management and Follow-up:**

The patient was started on empiric IV ceftriaxone and vancomycin and admitted to the hospital. A CT-guided T4-T5 disc/paraspinal soft tissue aspiration biopsy was performed, which began growing acid fast bacilli. Multiple quantiferon tests were negative, so the patient was empirically treated for nontuberculous mycobacteria with IV imipenem and IV amikacin. The growing microorganism was identified as *Mycobacterium heckeshornense*. The patient was started on azithromycin and ethambutol in addition to continuing IV amikacin, while imipenem was discontinued. He underwent 4 weeks of IV antibiotic therapy before surgical intervention of a T4-T5 corpectomy, thoracic spine arthrodesis, and bilateral pedicle screw instrumentation. After surgery, the patient was continued on empiric treatment of ethambutol and azithromycin. He will remain on this regimen for 12 months.

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## Learning Objectives

1. Form an accurate differential diagnosis when suspecting spondylodiscitis.
2. Understand that infectious spondylitis due to nontuberculous mycobacteria (NTM) may require treatment regimens specific to the microorganism identified.

## Abstract Reference Number: 116

Authors: Yara Khalifa, DO, MPH

Co-authors:

**Submission Type:** Unusual Case Presentation (a unique, rarely seen clinical scenario with discussion of a patient)

**Submission Category:** Women's & Children's Health

**Presentation Type:** Oral Abstract Presentation (10 minute presentation)

## Abstract Title: A Two Year Long Headache: Unusual Presentation of a Mysterious Disease

### Abstract

This is a 20-slide PowerPoint presentation of a case I encountered in the outpatient setting who underwent a two year search for a diagnosis for her headaches. This was an extensive chart review and patient interview presented in timeline form.

## References

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### Learning Objectives

Treat sarcoidosis. Discuss approach to confirmation of sarcoidosis.

### Abstract Reference Number: 117

Authors: Yara Khalifa, DO, MPH

Co-authors:

**Submission Type:** Community Project (A personal experience working on a community-based initiative to improve the health of a specific population. Student/resident applicant(s) must have served in a leadership role in the planning and execution of the project)

**Submission Category:** Public Health & Environmental Medicine

**Presentation Type:** Oral Abstract Presentation (10 minute presentation)

### Abstract Title: Holistic Approach to Care

#### Abstract

During my two-month rural rotation, I created culturally competent, holistic guides to target key issues within my population. I accomplished this by incorporating aspects of Dialectical Behavior Therapy, community mutual aid, and evidence-based tobacco cessation techniques.

#### References

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### Learning Objectives

Cite examples of techniques of Dialectical Behavioral Therapy. Describe the steps to tobacco cessation. Apply new health promotion techniques in a real-world clinical setting.

### Abstract Reference Number: 119

Authors: Yara Khalifa, DO, MPH

Co-authors: Carmen Ceron-Velasquez, MD, Pediatrics, PGY-2, Fort Lauderdale, FL; Sachin Vasikaran, MD, Pediatrics, PGY-2, Fort Lauderdale, FL.

**Submission Type:** Unusual Case Presentation (a unique, rarely seen clinical scenario with discussion of a patient)

**Submission Category:** Women's & Children's Health

**Presentation Type:** Poster Abstract Presentation (5 minute presentation)

### Abstract Title: Giant Neonatal Hepatitis and Biliary Atresia Secondary to Complete Anatomic Absence of Biliary Tree

## Abstract

### Introduction:

Biliary atresia (BA) is a cholangiodestructive disease of the biliary tree that presents as pathologic jaundice. It occurs in 1 in 10,000 to 15,000 births in the United States. BA is the most common cause of end-stage liver disease and liver transplantation in children. Clinical manifestations include clay colored or alcoholic stools, impaired hematopoiesis, prolonged coagulation, and hepatosplenomegaly. Etiologies of biliary atresia include infectious, congenital, metabolic, acquired, autoimmune, and seasonal. Patients with BA should receive operative management within the first 60 days of life.

### Case Report:

The patient is a full term 3-month-old Haitian male, with prior medical history notable for abnormal TFTs on newborn screen, who presented to his primary care physician's office for a well child check up after being lost to follow up. No prior surgical history and no medications. Parental concerns during the visit included increasing yellowing of the eyes and skin, as well as pale appearing stools. On exam, the patient was jaundiced with scleral icterus, had firm hepatomegaly extending 2 inches below the costal margin. In addition, he was noted to be passing acholic stools with dark urine. Laboratory testing demonstrated elevations in bilirubin (total 13.2 mg/dL, direct 9.5 mg/dL), alkaline phosphatase (2024 U/L), AST (367U/L), and ALT (210U/L). He was immediately referred to our institution for a multidisciplinary evaluation. Infectious disease work up including cytomegalovirus, was otherwise negative. He underwent a liver ultrasound that demonstrated a sonographically normal liver without nodularity or cirrhosis, but failed to visualize the gallbladder. Gallbladder ultrasound revealed a small non-distended structure in the RUQ and a HIDA scan did not excrete after 24 hours. As a result, the patient underwent liver biopsy and intraoperative cholangiogram for suspected biliary atresia. The latter was unsuccessful since there was no extrahepatic biliary system. The biopsy demonstrated a cholestatic pattern with diffuse cholestasis as well as ductal proliferation. These findings were interpreted as consistent with biliary atresia, and thus the surgical team proceeded with the Kasai hepatoportoenterostomy (HPE) Of note, the patient underwent HPE on DOL 102. The patient recovered well postoperatively without significant complication. The final pathology confirmed biliary atresia with suggestive concomitant neonatal giant cell hepatitis. The patient continued to do well, with downtrending liver enzymes and bilirubin. No more scleral icterus, jaundice or acholic stools. However, since the patient was not diagnosed at an early stage, evaluation for liver transplant was recommended and therefore transfer to a pediatric transplant center was made.

Discussion: This case highlights several important points. Due to the age of the patient, prompt diagnosis and intervention was paramount. Kasai portoenterostomy is ideally performed within the first 60 days of life to avoid significant pathologic progression which could necessitate liver transplantation. Additionally, this case places further importance upon routine neonatal outpatient visits to closely monitor the patient's clinical progression.

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**Learning Objectives**

Quickly discern the rise of pathological jaundice in post-natal babies.