



MEDICAL EDUCATION DAY

APRIL 20, 2022

UPMC Central PA Region physicians and healthcare professionals will present case studies, clinical topics of interest and research during medical and surgical track sessions. In addition, the program includes poster presentations, awards ceremony and a keynote address.

KEYNOTE ADDRESS:

GLORIA GOINS, JD, MBA

"When Good Isn't Good Enough: How Unconscious Bias Harms Patients...Despite Our Good Intentions"



Gloria Goins is currently Head of Health Equity and Business Partnerships at Amazon. Former Chief Diversity & Inclusion Officer, Bon Secours Health System; Former VP of Business Diversity Outreach, Prudential Financial; and Former Chief Diversity Officer, The Home Depot. She will speak to the topic of how unconscious bias harms patients.

William Bambach, MD

2022 Chair, Medical Education Day Committee

John Mantione, MD

President, UPMC Pinnacle Medical Staff



April 20, 2022

Welcome to Medical Education Day 2022!

We would like to thank all of those individuals who submitted abstracts for this year's program. We appreciate the time and effort you put into preparing your abstracts, presentations or posters.

This program is made possible by the generous financial support of the CGOH Foundation and the UPMC Pinnacle Medical Staff.

In addition, we'd like to thank the family of the late Dr. Loucas Tzanis for their generous support. With Dr. Tzanis' passing in 2004, his wife, Helen, established an annual award to recognize an internal medicine resident who has excelled in bedside practice, as nominated by the nursing staff. In 2020, to further recognize Dr. Tzanis' legacy, Helen, her son Evan and daughter-in-law, Nia, expanded the program to recognize distinction in research by providing for financial awards to the top oral and poster presentations in the medical track at Medical Education Day. The UPMC Pinnacle Foundation's Dr. Thomas Outland Education Fund provides for the awards for the top oral and poster presentations for the surgical track.

We have organized the morning program into simultaneous presentations of medical and surgical tracks to provide areas of interest for all attendees. At the conclusion of the morning lectures, please join us for the awards ceremony and a keynote address by Gloria Goins, who will present "*When Good Isn't Good Enough: How Unconscious Bias Harms Patients... Despite Our Good Intentions.*"

We hope that you will find this program informative and enjoyable.

Sincerely,

William Bambach, MD

William Bambach, MD
Chair, Medical Education Day Committee 2022



LIFE CHANGING MEDICINE

MEDICAL EDUCATION DAY – Virtual
(presenters/judges/moderators - on-site) UPMC Community
Wednesday, April 20, 2022

AGENDA

TIME	EVENT
7:00 a.m.	Rooms open – AV Testing
7:00- 7:45 am	Poster Authors available for Q&A for Poster Judges
7:15 a.m.	Poster Session Acknowledgment of Work - virtual
7:45 a.m.	Introduction/Welcome – William Bambach, MD - Chair
8:00 a.m.	Medical and Surgical Track Presentations Begin – Moderator Opening Remarks and Instructions Moderator – Surgical Moderator – Medical
9:45-10:15 a.m.	BREAK
10:15 a.m.	Medical and Surgical Track Presentations Continue
11:45 a.m.	BREAK
12:00 p.m.	Keynote Speaker Gloria Goins, JD, MBA “When Good Isn’t Good Enough: How Unconscious Bias Harms Patients... Despite Our Good Intentions”
1:00 p.m.	Keynote Q&A – Dr. Bambach
1:15 pm	Tzanis Awards Ceremony - William Bambach, MD Jessica Ritchie, VP Development Tzanis Family and Guests
1:30 p.m.	Closing Remarks - Conclusion of Program - William Bambach, MD

MEDICAL EDUCATION DAY COMMITTEE

William Bambach, MD - Committee Chair

PHYSICIANS	RESIDENTS
Timothy Ackerman, DO	Isaac Nivar, DO
Balint Balog, MD	Nicole Gentile, DO
Robert Carman, DO	Patrick Brunk, DO
Luciano DiMarco, DO	Anatoliy Korzhuk, MD
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Brynn Wolf, MD	Amanda Pires, DPM
Amy Wyatt, DO	O'Hara Haley, MD
Brian D'Eramo, DO	Chance Benner, MD
Aaron Barasch, DO	Dawn Cox, DO
	Farrah El-khatib, DO
	Adam Devine, DO
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Dawn Becker Executive Assistant	
Jarrette Thomas Education Project Specialist	
Laurie Schwing Manager, Library Services	



Medical Education Day 2022

JUDGES & MODERATORS

ORAL PRESENTATIONS - MEDICAL TRACK

<p>Anthony Guarracino DO Emergency Medicine UPMC Harrisburg</p>	<p>Saketram Komanduri MD Internal Medicine UPMC Harrisburg</p>	<p>Shane Specht, DO Internal Medicine UPMC Harrisburg</p>
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ORAL PRESENTATIONS - SURGICAL TRACK

<p>Holly Thomas, MD Obstetrics & Gynecology UPMC Harrisburg</p>	<p>Avi Hameroff, MD Maternal Fetal Medicine UPMC Harrisburg</p>	<p>Ronald Lippe, MD Orthopedics Orthopedic Institute of PA</p>
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POSTER PRESENTATIONS – MEDICAL TRACK

<p>Manpreet Singh MD Transplant Nephrology UPMC Harrisburg</p>	<p>Michael Yurkewicz, DO Sports Medicine UPMC Community</p>	<p>Qurat-ul-Ain Mansoor MD Geriatric Medicine UPMC Harrisburg</p>
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POSTER PRESENTATIONS – SURGICAL TRACK

<p>Daniel Yarmel DPM Podiatry Foot & Ankle Specialists of the Mid-Atlantic</p>	<p>Chavone Momon-Nelson DO Obstetrics & Gynecology UPMC Carlisle</p>	<p>Vijay Menon MD Transplant Surgery UPMC Harrisburg</p>
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TRACK MODERATORS

MEDICAL TRACK	SURGICAL TRACK
<p>Christopher Scheid, DO Family Medicine UPMC Lititz</p>	<p>Matthew Kelly, MD Orthopedic Surgery Orthopedic Institute of Pennsylvania</p>

Medical Staff Officers, Program Directors and Physician Education and Training

Medical Staff Officers:	Residency Program Directors:
<p>John Mantione, MD Medical Staff President</p> <p>Troy Moritz, DO Medical Staff President-Elect</p> <p>Anthony Guarracino, DO Secretary/Treasurer</p>	<p><u>Family Medicine:</u> Daniel Kambic, DO – Community Campus Christopher Scheid, DO – Lititz Campus</p> <p><u>Emergency Medicine:</u> Erik Kochert, MD – Harrisburg Campus</p> <p><u>General Surgery:</u> Luciano DiMarco, DO – Community Campus Harold Yang, MD – Harrisburg Campus</p>
Physician Education:	Internal Medicine:
<p>John Goldman, MD Vice President of Medical Affairs Associate DIO Graduate Medical Education</p> <p>Holly Thomas, MD Associate DIO Graduate Medical Education</p> <p>Esther Thoman Knisely, CTAGME Director, Physician Education and Training</p> <p>Vanessa Jordan Operations Manager</p> <p>Jarrette Thomas Education Project Specialist</p> <p>Dawn Becker Executive Assistant</p>	<p>John Cinicola, MD – Harrisburg Campus Shane Specht, DO – Osteopathic Track Dale Lent, DO – Lititz Campus</p> <p><u>Obstetrics and Gynecology:</u> Holly Thomas, MD – Harrisburg Campus</p> <p><u>Orthopedic Surgery:</u> Timothy Ackerman, DO - Community Campus</p> <p><u>Podiatry:</u> Jeffrey Marks, DPM – Harrisburg Campus</p> <p><u>Anesthesia:</u> Kristin Brennan, MD – Harrisburg Campus Dave Simons, DO - Lititz Campus</p>
	Fellowship Directors:
	<p><u>Maternal Fetal Medicine:</u> Timothy Canavan, MD</p> <p><u>Sports Medicine</u> Steven Collina, MD</p> <p>Addiction Medicine Greg Swartzentruber, MD</p> <p><u>Critical Care Fellowship</u> Navitha Ramesh, MD (Acting PD)</p> <p><u>Cardiovascular Disease</u> Atizazul Mansoor, MD</p>



Gloria Goins, JD, MBA

Former Chief Diversity and Inclusion Officer for Bon Secours Mercy Health System

Gloria Goins is the former Chief Diversity and Inclusion Officer for Bon Secours Mercy Health System, the nation's 5th largest Catholic healthcare system. Under Gloria's leadership, DiversityInc recognized Bon Secours as one of the 10 best healthcare systems, for three consecutive years. Becker's Hospital Review recognized Gloria herself as one of the 15 chief diversity officers in healthcare to know.

In addition to leading the diversity and inclusion organization at Bon Secours, Gloria also led the organization's employee engagement strategy. Under her leadership, Bon Secours achieved the highest employee engagement score in the organization's history (the 99th percentile), and was recognized by the Gallup Organization as one of the Top Best Workplaces in the world.

Gloria is responsible for creating two world-class Diversity and Inclusion organizations from their very inception. Gloria served as the very first vice president of diversity for Cingular Wireless, which at the time was the nation's largest wireless communications company with more than 70,000 employees. Gloria's team at Cingular received numerous national awards and recognition for outstanding initiatives. Gloria also served as the very first Chief Diversity Officer at The Home Depot where she was as a senior member of operations team with accountability for all aspects of employee, customer, multicultural marketing, and community strategies for emerging markets.

Gloria is a former faculty member at Georgetown University, where she served as the founder and chair of the Georgetown Chief Diversity Officers' Roundtable. She is currently a faculty member at Jefferson Health where she teaches a course on diversity and inclusion and healthcare leadership.

Gloria earned a Master of Business Administration from Mercer University, a Juris Doctorate from the University Of Pennsylvania School Of Law, and a Bachelor of Arts degree in psychology from Stanford University.

CME / DISCLOSURE

Accreditation and Designation Statement

In support of improving patient care, the University of Pittsburgh is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC), to provide continuing education for the healthcare team.

Physician (CME)

The University of Pittsburgh designates this live activity for a maximum of 5.0 *AMA PRA Category 1 Credits™*. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Nursing (CNE)

The maximum number of hours awarded for this Continuing Nursing Education activity is 5.0 contact hours.

Other health care professionals will receive a certificate of attendance confirming the number of contact hours commensurate with the extent of participation in this activity.

Faculty Disclosure:

All individuals in a position to control the content of this education activity including members of the planning committee, speakers, presenters, authors, and/or content reviewers have disclosed all relevant financial relationships with any entity producing, marketing, re-selling, or distributing health care goods or services, used on, or consumed by, patients.

The following relevant financial relationships were disclosed:

Holly Thomas, MD Organon-nexplanon instructor

No other planners, members of the planning committee, speakers, presenters, authors, content reviewers and/or anyone else in a position to control the content of this education activity have relevant financial relationships to disclose.

Disclaimer Statement

The information presented at this CME program represents the views and opinions of the individual presenters, and does not constitute the opinion or endorsement of, or promotion by, the UPMC Center for Continuing Education in the Health Sciences, UPMC / University of Pittsburgh Medical Center or Affiliates and University of Pittsburgh School of Medicine. Reasonable efforts have been taken intending for educational subject matter to be presented in a balanced, unbiased fashion and in compliance with regulatory requirements. However, each program attendee must always use his/her own personal and professional judgment when considering further application of this information, particularly as it may relate to patient diagnostic or treatment decisions including, without limitation, FDA-approved uses and any off-label uses.

PROGRAM OVERVIEW:

The Medical Education Day allows clinical research and scholarly activity opportunities to be presented to our local and regional clinical care providers and GME Training Programs.

TARGET AUDIENCE:

Our local/regional Medical Staff Providers (MD/DO/RN/APPs) and our Graduate Medical Educations Residency Program trainees, Program Directors and teaching faculty.

/updated 4.19.2022

UPMC
University of Pittsburgh School of Medicine
Center for Continuing Education in the Health Sciences

UPMC Central PA Region Annual Medical Education Day 2022
April 20, 2022
Live Virtual Conference

This is not your official certificate.

How to receive your continuing education credit?

<https://cce.upmc.com/medical-education-day-2022>

This activity is approved for the following credit: *AMA PRA Category 1 Credit™*, and ANCC. Other health care professionals will receive a certificate of attendance confirming the number of contact hours commensurate with the extent of participation in this activity.

To receive credit, you will be required to login, complete the course evaluation and claim credit. If you are a new user, click "Register" to create a new account. The activity will be added to your Pending Activities and accessible on the first day of the activity. Upon completion, certificates will be available to download and stored for future reference in your Completed Activities.

How to receive your official certificate?

To receive credit, login to the UPMC Center for Continuing Education in the Health Sciences (CCEHS) continuing education learning portal, <http://cce.upmc.com>. If you are a new user, choose "Register" to create an account. **Note, records are matched to users by email address.**

- Go to **My Account, My Courses**
- Choose **Pending Activities**
- Click on the **course title** to complete the course evaluation and claim credit

New Continuing Education Management System Announcement

The UPMC Center for Continuing Education in the Health Sciences (CCEHS) is transitioning to a new continuing education (CE) learning portal, <https://cce.upmc.com>. By the end of 2019, this site will replace <https://ccehs.upmc.com>. The new CE portal will be used to claim and track your continuing education credits. This system offers updated and expanded functionality from what you are currently used to and will provide an enhanced experience of continuing education processes!

The new portal is account-based and will not require users to provide the last 5 digits of their social security number for access.

If you are a new user:

Step 1: Go to <http://cce.upmc.com>.

Step 2: Click [Register](#) (upper right corner). The email address used for creating your account should be the same email you use to register for continuing education activities and provide for activity sign-in/attendance purposes.

Step 3: Complete the questions and click on Continue. You will get a message the registration was successful.

Step 4: Adding your mobile number will enable you to instantly receive credit for attending Regularly Scheduled Series (such as Grand Rounds, Case Conferences) using SMS texting (the course contact will provide the texting information upon active utilization of this feature).

After you have logged into your account, go to “My Account”, “Edit” and click the “Mobile” tab to add your ten-digit mobile phone. You will receive a text with a confirmation code to confirm your mobile number. For step by step instructions visit, <https://cce.upmc.com/FAQ/SMS>.

Certificates:

Certificates will be available to download and stored for future reference. For step by step instructions on how to access your credits visit: https://cce.upmc.com/FAQ/access_credits.

External/Self Maintained Credits:

Learners will have the ability to add external/self-claimed credits to their account for ease of tracking purposes. For instructions visit: https://cce.upmc.com/FAQ/add_external_credits.

To answer other common questions, please visit <https://cce.upmc.com/FAQ>.



Oral Presentations

Medical Track

Medical Education Day 2022

Medical Track - Oral Presentation Schedule

TIME	TYPE	PRESENTERS	TITLE
8:00 AM	RESEARCH	Dayawa Agoons, MD, MPH; Batakeh Agoons, MD	Association Between Vitamin B6 Deficiency and Metabolic Dysregulation
8:15 AM	RESEARCH	Robin George, BSN, RN	Shift Work Disorder - Screening for Prevalence in a Community Hospital
8:30 AM	RESEARCH	Austin Tam, MD	How Does a Standardized Sign-Out From Impact Transitions of Care in the Emergency Department
8:45 AM	RESEARCH	Abbygale Hackenberger, MSN, RN, CCRN	Intensive Care Unit (ICU) Diary Pilot Program
9:00 AM	RESEARCH	Ahmed Aladham, DO	Effect of COVID-19 Surveillance Testing on Patient Perceptions in Outpatients Undergoing Cardiovascular Procedures: Results from the Restoring non-Emergent Cardiovascular Care In the Peri-COVID-19 Era (RECIPE) Registry
9:15 AM	CASE	Sushila Kabadi, DPM	Effectiveness Of Distal Fibular Mobilization And Posterior Glide Taping On Ankle Pain
9:25 AM	CASE	Bosky Soni, MD, MPH	Acute Pancreatitis Due to Insect Sting: A Case Report
9:35 AM	CASE	Zachary Scheid, DO; Ahmed Aladham, DO	A Case Report of Coronary Artery Fistula to Pulmonary Artery
9:45 AM - 10:15 AM - BREAK			
10:15 AM	RESEARCH	Bao Nhi Nguyen, DO; Yi-Ju Chen, MD; Anatoliy Korzhuk, MD; Rajan Pathak, MD; Michaela Sangillo, MD	Incidence Of Pneumothorax In Covid 19 Patients And Correlation With Patient Outcomes At Upmc Harrisburg, West Shore And Community General Hospital System
10:30 AM	RESEARCH	Aaron Bezio, PharmD	Review and Evaluation of Alvimopan Use at a Multi-Hospital Health System
10:45 AM	CASE	Jinah Kim, MD; Maidah Malik, MD	A Case of Pulmonary Histoplasmosis in an Immune Competent Patient
10:55 AM	CASE	Andrew Sallavanti, DO	Optic Neuritis
11:05 AM	CASE	Mydah Sajid Hashmi, MD	Pulmonary Hypertension in a Newly Diagnosed SLE Patient

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Dayawa Agoons, MD, MPH; Batakeh Agoons, MD

TITLE:

Association Between Vitamin B6 Deficiency and Metabolic Dysregulation

ABSTRACT:

Introduction: Vitamin B6 has been implicated in several disease processes. However, the effects of vitamin B6 deficiency in metabolic dysregulation are poorly understood. We examined the association of vitamin B6 deficiency with the metabolic syndrome (MetS) and insulin resistance (IR). We hypothesized that vitamin B6 deficiency was associated with a higher risk of MetS and IR.

Methods: We analyzed data from 7532 adults pooled from the 2005-2010 National Health and Nutrition Examination Survey (NHANES). Vitamin B6 deficiency was defined as plasma pyridoxal 5 phosphate (PLP) levels <20 nmol/L. IR was ascertained by the homeostasis model assessment for insulin resistance (HOMA-IR) and the MetS was defined using the National Cholesterol Education Program – Adult Treatment Panel III criteria. HOMA-IR values were not normally distributed and were log-transformed for analysis.

Results: Of 7532 participants, 928 (12.3%) had vitamin B6 deficiency and 1183 (15.7%) had the MetS. In multivariable adjusted regression models, plasma PLP levels <20 nmol/L were inversely associated with the MetS (adjusted odds ratio [aOR]: 1.48, 95% CI: 1.19, 1.84, $p < 0.01$) and log HOMA-IR (β coefficient 0.12, 95% CI: 0.04, 0.19, $p < 0.01$). Vitamin B6 deficiency was also associated with higher odds of all components of the MetS except for elevated triglycerides (aOR: 0.96, 95% CI: 0.75, 1.23, $p = 0.74$) and fasting plasma glucose (aOR: 1.19, 95% CI: 0.95, 1.48, $p = 0.13$).

Conclusion: Vitamin B6 deficiency was independently associated with higher odds of the metabolic syndrome and insulin resistance. These results suggest that vitamin B6 deficiency may be involved in the pathogenesis of metabolic dysregulation.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Robin George, BSN, RN

TITLE:

Shift Work Disorder – Screening for Prevalence in a Community Hospital

ABSTRACT:

Hypothesis:

Frequency of non-standard shifts, rotation of shifts and 12 hour shifts will increase risk of Shift Work Disorder (SWD).

Overview of research:

Nurses in acute care work non-standard shifts, which can lead to SWD. SWD is caused by a disruption of circadian rhythms resulting in insomnia or excessive sleepiness associated with shift work. SWD is associated with increased health risks and workplace accidents, and decreased attention and memory. It is important to identify the prevalence and risk at the local level to develop and target interventions to diminish the effects of SWD and improve patient safety.

Design:

Non-experimental survey design with retrospective comparison of contributors for SWD

Methods and Results:

Nurses were informed of the study and provided with a link to the survey. A validated SWD screening tool was used to determine prevalence. Categorical data was analyzed utilizing a Chi-square test, continuous variables were analyzed utilizing a two-sample t-test, univariate analysis was performed between groups, followed by multiple logistic regression.

Prevalence was 45%. Analysis via multiple logistic regression showed frequency of night shifts ($p = 0.0105$), working rotating shifts ($p = 0.0260$), and having children <18 years old ($p = 0.0214$) were significantly associated with SWD. Nurses with children <18 years were six times more likely to develop SWD. Nurses who work rotating shifts are five times more likely to develop SWD. Every one night shift worked, increased the likelihood of developing SWD one time.

Conclusion:

A 45% prevalence rate of SWD in nurses supports the need to develop and implement evidence-based interventions to mitigate SWD's negative effects. Identifying variables associated with SWD can help to identify nurses at higher risk for SWD and allows for targeted education and interventions to mitigate effects and improve patient safety.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Austin Tam, MD

TITLE:

How Does a Standardized Sign-Out Form Impact Transitions of Care in the Emergency Department?

ABSTRACT:

Introduction: Transitions of care in the emergency department are opportunities for quality improvement. According to the patient safety publication, *To Err is Human*, 62% of continuity of care issues are attributed to shift changes between providers. PDSA (Plan-Do-Study-Act) cycles for quality improvement in ED handoffs allow for analysis of interventions as an ongoing process. By the administration of a needs assessment survey to UPMC Harrisburg EM residents, a templated sign-out form during patient handoffs was identified as an intervention that could be evaluated by PDSA cycles.

Hypothesis: We hypothesized that a templated sign-out form would improve information exchange, satisfaction, and perception of safety during transitions of care between EM residents at shift change.

Methods: For a study period of eight weeks, templated sign-out forms were implemented across two EDs to be utilized during patient sign-out between UPMC Harrisburg EM residents (n=19) during shift change. The layout of the form was adapted from the Safer SignOut Campaign. A pre- and post-intervention survey was administered to collect anonymous responses on perceptions of safety, satisfaction, and impacts of the form.

Results: Preliminary results reveal residents perceived sign-out was safer while using the form (+32.06%, %change with intervention). They also felt more prepared in discussing patients with consultants (+20.57%), admitting providers (+25.84%), and in discharging patients (+3.35%). Notably, no improvement in sign-out satisfaction (-17.22%) was found.

Discussion: We conclude that survey respondents considered the intervention to have improved perceived patient safety and made them more informed about the patients they received during sign-out. Residents had mixed responses towards the forms, specifically regarding ease of use and time commitment. Statistical significance was limited due to smaller sample size; however smaller sample sizes lend themselves well to quality improvement PDSA cycles. Future PDSA cycles will be necessary to evaluate what other tools can improve ED sign-out.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Abby Hackenberger, MSN, RN, CCRN

Title:

Intensive Care Unit (ICU) Diary Pilot Program

Purpose:

Address Post-Intensive Care Syndrome (PICS) through implementation of a diary for patients with an expected ICU length of stay over 24 hours and requiring mechanical ventilation.

Background:

Following ICU stays, patients with PICS can experience cognitive, physical, and mental health related symptoms that can impact their quality of life. Patients receiving mechanical ventilation and on sedatives are at highest risk. ICU diaries detail the time in ICU and have been shown to improve anxiety and depression for both patients and their families by allowing for a review of the experience, filling gaps of missing time related to the critical illness.

Summary:

Nursing staff and patient families entered daily descriptive narratives of the patient's progress in the diary during the ICU stay. Post-ICU discharge, patients and families reviewed the diary to bridge their memory gaps while improving patient acceptance of their ICU experience. Evaluation of the project included thematic review of patient and family follow-up calls, a staff nurse feedback survey, and project champion debrief sessions.

Follow-up calls illustrated a theme of support and gratitude for the diaries, regardless of patient outcomes. Nursing surveys confirmed that completion of ICU diary entries had minimal impact on workload. Nurses also described an ease in communication with families and improvement in processing their own emotions. Project champion debrief provided feedback on barriers and challenges during implementation which will be used to recommend future modifications.

Conclusion:

ICU diaries have the potential to benefit patients, families, and nursing staff during and after critical illness for little organizational cost. This intervention will continue to be utilized and the opportunity for future qualitative research regarding the benefits of ICU diaries will be explored. Additional questions to investigate include impact on patient and nurse satisfaction, and readmission rates.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Ahmed Aladham, DO

TITLE:

Effect of COVID-19 Surveillance Testing on Patient Perceptions in Outpatients Undergoing Cardiovascular Procedures: Results from the Restoring non-Emergent Cardiovascular Care In the Peri-COVID-19 Era (RECIPE) Registry

ABSTRACT:

The COVID-19 (C19) pandemic led to a decline in non-emergent invasive cardiovascular procedures due to many factors including patient avoidance behavior. We assessed the risks of contracting C19 and the effects of surveillance testing on patient perceptions on undergoing non-emergent cardiac procedures in a prospective registry.

Patients underwent SARS-CoV2 antigen (Ag) screening and symptomatic screening up to 9 days prior to procedure, and a sub-group underwent pre- and post-procedure antibody (Ab) testing. Telephone follow up at 7-14 and 30 days and a patient perception survey were conducted post procedure. Repeat Ag and Ab screening was performed 7-14 days following the procedure.

97 patients underwent cardiac (25%), vascular (28%), EP (14%) and/or structural heart (33%) procedures from July, 2020 to June, 2021. 13 patients (14%) were Ab+ Ag- pre-procedure and 1 patient converted to Ag+ test during the follow-up period. Based on patient perception surveys (Figure), there were high levels of hesitancy for invasive procedures done during the pandemic. Patients had more concern for their cardiovascular rather than C19 risk and were reassured by intense hospital precautions and C19 testing post procedure.

Non-emergent elective cardiovascular procedures were performed with minimal additional risk during the C19 pandemic and patient avoid behaviors were effected by reassurance from additional testing and hospital safety precautions.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Sushila Kabadi, DPM; Krupa Patel, DPM; Allan Grossman, DPM

TITLE:

Effectiveness of distal fibular mobilization and posterior glide taping on ankle pain

ABSTRACT:

STATEMENT OF PURPOSE

The fibula lies 30 degrees posterior to the tibia; however, through different injury mechanisms this relationship can change. We hypothesize that an anterior positioning of the fibular in relation to the tibia can lead to ankle pain. The purpose of this study was to investigate the effectiveness of manual manipulation and taping techniques to restore anatomic position and decrease pain.

LITERATURE REVIEW AND CASE STUDY

There is limited previous research done on this subject. Only one manuscript has been written exploring similar techniques.

This case study follows a healthy 17 year old female presenting 2 months after spraining her left ankle. Radiographs were negative for osseous abnormality. Physical exam revealed a prominent and anteriorly dislocated distal fibula with pain on palpation to the lateral ankle. She was prescribed physical therapy which included: manual therapy exercises, proprioceptive activities, resistance training, distal fibular mobilization with posterior glide and taping techniques.

RESULTS

A total of 10 sessions were performed over a 6 week period resulting in a 20 degree reduction of the anteriorly displaced fibula and significant decrease in the patient's pain. In the last 12 months, she has not experienced any return of pain and has been able to continue participating in recreational sports.

SUMMARY/CONCLUSION AND DISCUSSION

Classically, posterior dislocation of the fibula occurs; however, supination inversion injuries naturally place the fibula in an anterior position during impact. An additional forward force while running overcomes the bony buffering of the tibia and displaces the fibula further anteriorly. This anterior relationship has been seen following both acute and chronic ankle sprains as well as with ankle fractures that underwent previous ORIF with syndesmotic repair. This case shows, distal fibular mobilization with posterior glide and taping techniques can restore the anatomic position and relieve pain.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Bosky Soni, MD,, MPH

TITLE:

ACUTE PANCREATITIS DUE TO INSECT STING: A CASE REPORT

ABSTRACT:

Acute Pancreatitis due to insect sting is an extremely rare occurrence with only a few reported cases in the world. There is a lack of confirmatory tests to verify that insect venom directly leads to acute pancreatitis, making it challenging to identify the etiology.

Our case involves a 54-year-old female patient who visited urgent care due to difficulty breathing after an insect sting on her left hand, likely a bee sting per patient. She was treated with Epinephrine pen, which did not improve her symptoms. Due to increasing severity of respiratory distress, she was taken to the ED, and was intubated and sedated for severe anaphylaxis secondary to insect sting. She was treated with second dose of IM Epinephrine, followed by Methylprednisolone, Pepcid, and Benadryl. In the ICU, albuterol nebulizer and solumedrol were administered. She was extubated less than 24 hours after intubation. After being transferred to the floors, she complained of severe LUQ pain, nausea and vomiting. She underwent blood testing which showed elevated lipase of 2358 U/L. A CT of her abdomen was significant for peri-pancreatic edema without focal fluid collection, and post cholecystectomy changes. Her pancreatitis was treated with fluid resuscitation, pain management, and slow escalation of the diet. Her lipase trended down and her symptoms of abdominal pain resolved. She was reintubated for anaphylaxis due to her CVC dressings, and was successfully extubated after receiving Benadryl, Epinephrine and Decadron. The patient was medically stable and was discharged from the hospital.

As per patient, she has a history of multiple bee stings in the past. In conclusion, patients presenting with insect stings and new onset abdominal pain should be investigated for pancreatitis. Research has shown that insect venom contains toxins like phospholipase A1/A2, histamine, and melittin, which act on pancreatic acinar cells to induce acute pancreatitis

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Zachary Scheid, DO PGY-1; Ahmed Aladham, DO PGY-2

TITLE:

A Case Report of Coronary Artery Fistula to Pulmonary Artery

ABSTRACT:

Purpose: The focus of this case is to investigate coronary steal in a patient with an acute ischemic episode with anomalous coronary anatomy.

Background/case description: Coronary artery fistula (CAF) is a congenital or acquired abnormal vascular connection of coronary arteries with any segment of the systemic or pulmonary circulation. CAFs are very rare, accounting for approximately 0.3% of congenital heart diseases. Most patients with CAFs are asymptomatic, but complications can arise in untreated significant fistulae including heart failure, arrhythmias and fistula aneurysm.

A 64-year-old male with a past medical history of significant aortic stenosis who presented to the emergency department for evaluation of atypical chest discomfort with associated exertional dyspnea for two days. He described the pain as sharp, constant, and non-radiating. Symptoms started following a golfing session. Physical exam was remarkable for 4/6 crescendo decrescendo systolic murmur. The patient was noted to have borderline ST elevations in the anterior leads. Troponins were mildly elevated at 0.08 ng/ml with a flat trend. Transthoracic echocardiogram demonstrated normal left ventricular ejection fraction with severe aortic stenosis but no regional wall motion abnormality. This patient underwent a heart catheterization which demonstrated progressive severe aortic stenosis with single-vessel right coronary artery disease and significant coronary fistula noted off the left main possibly to the pulmonary artery (saturation 74%). A trans catheter aortic valve replacement was performed following cardiac catheterization.

Summary: For this case, we present a patient with a significant coronary fistula off the left main to pulmonary artery, who was diagnosed and operated on in timely manner and was safely discharged home.

Conclusion: Coronary artery fistulas are a rare, abnormal communications in the coronary artery system that can be detected incidentally during diagnostic coronary angiography. Most patients are asymptomatic and remain hemodynamically stable. Though rare, the prognosis of CAFs in adults is excellent.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Bao Nhi Nguyen, DO; Yi-Ju Chen, MD; Anatoliy Korzhuk, MD; Rajan Pathak, MD; Michaela Sangillo, MD

TITLE:

Incidence Of Pneumothorax In Covid 19 Patients And Correlation With Patient Outcomes At Upmc Harrisburg, West Shore And Community General Hospital System

ABSTRACT:**Overview**

Spontaneous pneumothorax, pneumomediastinum, and subcutaneous emphysema have been described as rare life-threatening complications of COVID-19. The purpose of this study is to investigate the incidence of spontaneous pneumothorax, subcutaneous emphysema and pneumomediastinum in patients who were admitted with COVID-19 at UPMC Pinnacle Hospitals from March 2020 to March 2021. We hypothesize that these pulmonary findings were related to higher morbidity and adverse outcomes.

Methods

This is a retrospective chart review analysis of all adults admitted at Harrisburg, West Shore, and Community General hospital system with COVID-19. Patients included in the study presented between March 2020 and March 2021. Cases were collected retrospectively from the three main UPMC Central PA hospitals with inclusion criteria limited to diagnosis of COVID-19 with presence of pneumothorax, pneumomediastinum, or subcutaneous emphysema. Details obtained from the medical record included demographics, radiology, laboratory investigations, clinical management and survival.

Results

Final Data and statistical analysis is pending. Of the 773 patients admitted to the three main UPMC Central PA hospitals, 49 patients had spontaneous pneumothorax, pneumomediastinum, or subcutaneous emphysema. Clinical scenarios included patients who developed these pulmonary findings during their inpatient admission with COVID-19. Survival at 30 days was compared and preliminary data suggests no significant difference following pneumothorax, pneumomediastinum, or subcutaneous emphysema. Incidence and survival between sexes, ages, and need for mechanical ventilation are currently being analyzed.

Conclusion

This study suggests that spontaneous pneumothorax, pneumomediastinum and subcutaneous emphysema are complications of COVID 19. These findings may be an independent marker of poor prognosis in this population. Clinicians are encouraged to keep these differentials in mind when presented with COVID-19 patients with worsening respiratory status and start treatment when clinically possible

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Aaron Bezio, PharmD

TITLE:

Review and Evaluation of Alvimopan Use at a Multi-Hospital Health System

ABSTRACT:

Alvimopan is a peripheral mu-receptor antagonist approved to accelerate time to gastrointestinal recovery following partial bowel resection with primary anastomosis. Due to myocardial infarction risk with long-term use, alvimopan is available only through the Alvimopan Shared System Risk Evaluation and Mitigation Strategy (REMS). This program requires patients to receive 15 doses or less and prohibits outpatient use. UPMC Central Pa has limited use to inpatients undergoing cystectomy or colorectal surgery with primary anastomosis. To aid in limiting treatment duration, pharmacists are notified when alvimopan patients have a documented bowel movement.

UPMC Central Pa Region patients who received alvimopan between July 2020 and June 2021 were identified and reviewed retrospectively to evaluate alvimopan efficacy, appropriateness of use, REMS compliance, and impact of pharmacist intervention on therapy duration. Efficacy was determined by documented evidence of oral intake and bowel movements and postoperative ileus (POI) incidence.

58 alvimopan patients were identified. Return to GI function was 14.9 hours for first oral intake and 40.7 hours to first bowel movement. Patients primarily underwent open partial bowel resections (71% vs. 24% laparoscopic). Open procedures had a greater incidence of POI (22% vs. 14% laparoscopic). Median doses per patient did not differ based on occurrence of POI (5 doses). Pharmacist intervention following a bowel movement occurred in 45% of cases and resulted in 3 less doses of alvimopan on average when accepted. REMS compliance was 100%.

Patients showed quick return to GI function. All REMS requirements for safe use were met, with no patients receiving >15 doses and no outpatient prescriptions entered. However, areas for improvement in appropriateness of use were recognized as 3 procedures did not include primary anastomosis and 19% of patients did not receive a preoperative dose. Pharmacist intervention reduced unnecessary use by assisting in discontinuing alvimopan when GI function had returned.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Jinah Kim, MD; Ella Ishaaya, MD;, Maidah Malik, MD; William Bambach, DO; Lisa Tkatch; MD

TITLE:

A Case of Pulmonary Histoplasmosis in an Immune Competent Patient

Abstract:

Introduction: Histoplasmosis is a fungal infection spread by inhalation of airborne spores of *Histoplasma capsulatum*. Immunocompetent individuals who acquire acute pulmonary histoplasmosis commonly are asymptomatic and have a self-limited disease course.

Case: We present a 42-year-old patient who sought medical care due to recurrent fevers. He was misdiagnosed with septic emboli 10 days prior and came for a second opinion after his symptoms failed to resolve. The patient reported that he was a truck driver responsible for transporting pigs across Pennsylvania and North Carolina. He was living on a farm with pigs, cows, chicken, sheep, and dogs. He frequently enjoyed water sports and hunting trips, and even butchered his own meat last year. He also recently renovated his old garage that housed many bird nests and mice. Diagnostic workup revealed numerous non-cavitary solid intrapulmonary nodules throughout both lungs with mediastinal and hilar lymphadenopathy. Infectious workup was negative for Lyme, Anaplasmosis, Bartonella, Bordetella, Chlamydia pneumonia, Mycoplasma, HIV, and Coxiella. Lymph node biopsy with EBUS yielded a diagnosis of Histoplasmosis. Fungal culture from BAL remained negative for 50 days and then grew fungus. Urine histoplasma galactomannan antigen tests were negative. Serologic test with Immunodiffusion was positive for M band histoplasmosis. He was treated with amphotericin for 2 weeks followed by long term itraconazole without complications.

Discussion:

Since *H. capsulatum* has become more widespread globally and often mimics other disease processes, there must be a high index of suspicion for Histoplasmosis in immunocompetent patients presenting with nonspecific fevers.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Andrew Sallavanti, DO

TITLE:

Optic Neuritis

ABSTRACT:

Introduction: Optic neuritis is an acute injury to the optic nerve with demyelination. Often there is painful vision loss in one eye occurring over several days. There can be associated optic atrophy and decreased visual acuity. Within five years of symptom onset, multiple sclerosis may develop, although there are many other potential causes of optic neuritis.

Case:

A thirty-year-old man presented to the emergency department with left eye pain worsened by extraocular movement. He had noticed pressure behind his eye and blurry vision in the left eye over several days. He never had these symptoms before. Earlier that day, his ophthalmologist noted disc edema, and the patient was directed to the hospital.

In the emergency department, patient denied any focal weakness or numbness. Review of systems was negative except for blurred vision and pain with left eye movement. The patient was unable to identify fingers being held up in the lower right and left quadrants in his left visual field. He had decreased acuity, along with reduced mobility of his left eye. Both eyes reacted to light and accommodation, but the left eye responded sluggishly. Initial labs were unremarkable. Magnetic Resonance Imaging (MRI) revealed T2 enhancement in the left optic nerve, consistent with optic neuritis. Spinal fluid analysis revealed oligoclonal bands. The patient subsequently received three days of IV solumedrol. After discharge, the patient followed up with neurology.

Discussion:

This relatively rare case emphasizes the necessity for coordination of care between different specialties such as ophthalmology, the emergency department, neurology, and internal medicine. When a patient less than fifty years old presents with painful vision loss in one eye, a clinical diagnosis of optic neuritis can often be made. MRI can confirm the diagnosis, and allows for evaluation of one of the common causes such as multiple sclerosis.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Mydah Sajid Hashmi, MD

Introduction:

Pulmonary artery hypertension (PAH) is a clinically severe pulmonary complication of Systemic Lupus Erythmatosus (SLE). While PAH has a known association with SLE, it is rarely the part of the initial presentation of the disease. Here we describe a patient who presented with dyspnea and was diagnosed with PAH and SLE during her hospital admission.

Case Description:

A 25-year-old female with no significant medical history came to the emergency department with progressively worsening dyspnea. She reported generalized body aches, joint pain and unintentional weight loss for a couple of months. She had also noticed nodular swelling in her neck for one week. On examination, she was tachycardic with normal blood pressure and saturating well on room air. Her CT imaging showed axillary lymphadenopathy bilaterally, pericardial effusion, and splenomegaly with no pulmonary embolism. Autoimmune workup showed positive ANA screening with low levels of C3 and C4. Anti-Smith and anti-Sm/RNP antibodies levels were elevated. A cardiac echocardiogram showed normal ventricular function with moderate pericardial effusion concerning for cardiac tamponade. Pericardiocentesis was performed followed by placement of a pigtail drain. The patient was started on corticosteroids and hydroxychloroquine for treatment of acute flare of lupus. Unfortunately, the patient developed worsening tachycardia with hypotension. Repeat cardiac echo showed dilation of the right side of the heart and pulmonary artery with suspected PAH. A Swan-Ganz catheter was placed showing PAH. Sildenafil was started which resulted in significant improvement of symptoms and she was discharged home.

Conclusion:

PAH can occur in SLE patients due to various mechanisms, most commonly due to vascular wall inflammation during acute flares. It is treated with immune-suppressive drugs along with medications used to specifically treat PAH including phosphodiesterase inhibitors, endothelin-1 receptor antagonists, and prostacyclin analogs. Although rare, physicians should be aware of PAH during the initial presentation of SLE.



Oral Presentations

Surgical Track

Medical Education Day 2022

Surgical Track - Oral Presentation Schedule

Time	Type	Presenters	Title
8:00 AM	CASE	Breanna Davis, Dol Anna Elisa Muzio, DO	Angiomatoid Fibrous Histiocytoma Presenting as a Painful Palmar Lesion: Case Study and Literature Review
8:10 AM	CASE	Matthew Kendall, DO; Charlie Yoo, DO; Devin Olsen, DO; Daniel Kim, DO	A Novel Technique To Detect Inter-Prosthetic Dislocations In Dual Mobility Hip Arthroplasty: A Case Report
8:20 AM	CASE	Amir Guindi, MD ; Wesley Jong, MS3	Young & Healthy with Septic Emboli? Think Lemierre's Syndrome
8:30 AM	CASE	Brian Omslaer, DO; Omar Fareedi, DO	Retro-odontoid Pseudotumor/Pannus Resolution following Occipital-cervical Fusion
8:40 AM	CASE	Cameron Benedict, MD; Indranil Sau, MD	Rapunzel Syndrome: An Unusual Presentation
8:50 AM	RESEARCH	Isaac Nivar, DO; Muzaffar Ali, DO; Anthony Kamson, DO; Raymond Dahl, DO	Acetabular Cup Positioning, Complications, and Patient Outcomes: A Comparison of Robotic posterior and Conventional Anterior THA
9:10 AM	RESEARCH	Patrick Hancock, MD	Precision Micropuncture—a Novel Approach to Augment Angiogenesis in Acellular Collagen Scaffolds
9:25 AM	RESEARCH	Shaan Sadhwani, DO	Preemptive multimodal oral analgesia in total joint arthroplasty: Gabapentin appears counterproductive
9:40 AM	TOPIC	Sibo Sun, DO; Leighann Panico, DO, MPH; Surena Namdari, MD, M.Sc	Long Head of Biceps Tendon Injuries: Biomechanics, Clinical Ramifications, and Management
9:50 AM	TOPIC	Anthony Kamson, DO	An Insight on Lyme Prosthetic Joint Infection in Total Knee Arthroplasty: A Literature Review
9:50 AM - 10:15 AM - BREAK			
10:15 AM	RESEARCH	Christopher Ferguson, DO; Nathan Angerett, DO; Alex Yevtukh, DO;	Effects of a perioperative renal protocol on postoperative acute kidney injury rates following total joint arthroplasty
10:30 AM	RESEARCH	David Phillips, DO; Muzaffar Ali, DO; Anthony Kamson, DO; Isaac Nivar, DO; Raymond Dahl; DO	Learning Curve of Robotic-Assisted Total Knee Arthroplasty for Non-Fellowship-Trained Orthopedic Surgeons

10:45 AM	RESEARCH	Inderpreet Singh, DO; Muzzafar Ali, DO	Early Superior Clinical Outcomes in Robotic Assisted TKA Compared to Conventional TKA in the Same Patient: A Comparative Analysis
11:00 AM	RESEARCH	Bradley Lazzari, DO	Open Versus Closed Intramedullary Nailing of Humeral Shaft Fractures
11:15 AM	RESEARCH	Michael Marcinko, DO; Bradley Lazzari, DO	Assessment of Autograft versus Allograft in Primary Anterior Cruciate Ligament Reconstruction
11:30	RESEARCH	Kathryn McCabe, DO; Charlotte Floria, DO; Tylee Rickett, MD; Harold Yang, MD; PhD	Surgical Resident Attributes Contributing to Success on the ABS Qualifying Exam: A Multivariate Analysis

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Breanna Davis, DO; Anna Elisa Munzio, DO

TITLE:

Angiomatoid Fibrous Histiocytoma Presenting as a Painful Palmar Lesion: Case Study and Literature Review

ABSTRACT

Purpose:

To report a rare angiomatoid fibrous histiocytoma (AFH) in the thenar aspect of the hand. Common locations of tumor burden include the soft tissues of thigh, upper arm, and forearm. No published case reports describe a palmar lesion.

Case Description:

A 21-year-old, right-hand dominant, female with no past medical history presented with a one-year history of a slowly increasing and painful mass overlying her right thenar eminence. Radiographs of the right hand were negative for acute pathology. She underwent surgery to obtain a tissue diagnosis. Intraoperatively, a 2 cm well-encapsulated mass was removed from the thenar aspect of the palm. Pathology was consistent with an AFH. Further genetic studies of the lesion are pending.

Summary:

AFH is a rare, slowly progressing, soft tissue tumor of moderate malignant potential. AFH has a predilection for presentation in the soft tissues of the thigh, proximal arm, and forearm and is most commonly found in children and young adults. There are no specific radiographic findings to suggest AFH. Histologically, the tumor generally has a thin outer shell of lymphoid tissue and is comprised of blood filled spaces and aggregates of plasma and dendritic cells. AFH may show immunoreactivity for epithelial membrane antigen, CD68, and CD99. Some cases show presence of a EWS/ATF1 or EWS/CREB gene translocation. There is a propensity for local recurrence and a rare risk of metastatic disease to the liver and lungs. The main modality of treatment is complete excision with post-operative follow-up to monitor for the development of recurrent disease.

Conclusion:

AFH is a rare soft tissue tumor of mesenchymal origin with intermediate malignant potential. Typically, lesions are found in the proximal limb musculature and have nonspecific radiographic findings. Our case is unique, as it is the first case to document a palmar lesion.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Matthew Kendall, DO; Charlie Yoo, DO; Devin Olsen, DO; Daniel Kim, DO

TITLE:

A novel technique to detect inter-prosthetic dislocations in dual mobility hip arthroplasty: A case report

ABSTRACT

Stated Purpose:

To describe a novel clinical technique for diagnosing interprosthetic dislocation in Dual Mobility total hip implants.

Case Presentation:

A 63-year-old female presented with a prosthetic hip dislocation. She had a left total hip arthroplasty (THA) with Dual mobility (DM) components performed 3 years earlier. Dislocation was confirmed clinically and radiographically. After adequate sedation, a gentle reduction maneuver was performed. Afterwards, leg lengths were equal, however, we performed a gentle shucking maneuver with axial compression through the hip joint, which produced an audible clicking noise, indicating a possible interprosthetic dislocation. Post-reduction radiographs demonstrated eccentric reduction, supporting our suspicion. The patient underwent revision THA the following day, which confirmed the interprosthesis dissociated from the ceramic head. The patient was revised to a constrained liner, made weight-bearing as tolerated, and progressed to be discharged home.

Summary:

Prosthetic hip dislocation is a common complication following THA. DM THA implants were created to address this. However, the dual-bearing chamber had an unintended consequence of dissociation of its components, known as interprosthetic dislocation. In DM systems, the femoral component's ceramic head is seated within a polyethylene interprosthesis and articulates semi-independently within the acetabular cup. Dissociation can occur during the original dislocation or the reduction attempt and is difficult to detect as the interprosthesis is radiolucent. Our described technique comprises of axial compression and shucking of the hip joint after a reduction attempt. If present, an audible click is produced by an uncovered ceramic head contacting the metal acetabular cup. Post-reduction radiographs can demonstrate a non-concentric reduction, supporting interprosthetic dislocation.

Conclusion:

Interprosthetic dislocation of DM implants is a potentially catastrophic complication of DM THA. A reliable method of recognizing this complication will reduce morbidity of these complications. We describe a non-invasive physical exam technique to recognize these dislocations and hope to decrease the number of missed cases.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Amir Guindi, MD; Wesley Jong, MS3

TITLE:

Young & Healthy with Septic Emboli? Think Lemierre's Syndrome

Purpose:

Raise awareness of a rare disease overlooked in young and healthy patients who present with sepsis of unknown source.

Background:

Lemierre's syndrome is characterized by septic thrombophlebitis of the internal jugular vein and bacteremia. Since the advent of antibiotics, Lemierre's syndrome has been extremely rare but most commonly affects healthy young adults, the incidence being between 1-3 cases per million people. Presentation typically begins with an oropharyngeal infection like sore throat and fever. However other presenting symptoms, that indicate spread of infection, include pain in the neck, ears or teeth, neck mass, pleuritic chest pain, dyspnea, cough/hemoptysis, and abdominal pain. *Fusobacterium necrophorum* is part of normal oropharynx flora, usually non-invasive, and is the most prototypical species underlying bacteremia in Lemierre's syndrome.

Case Summary:

We present a case of an 18-year-old female with three days of fever, abdominal pain, vomiting, weakness and jaundice. CT chest revealed multiple bilateral cavitory lesions as well as right sided empyema. A right chest tube was placed and one liter of pus drained. She was admitted due to septic shock, intubated, and put on broad spectrum antibiotics including ceftriaxone, metronidazole and vancomycin. Initial blood cultures obtained grew *S. dysgalactiae* group C. The patient's respiratory status worsened over several days and repeat CT chest showed evidence of numerous septic emboli increasing in number and size. TEE was negative for vegetations. Pleural fluid cultures later resulted and grew *Fusobacterium necrophorum*. CT of the neck showed a filling defect in the right internal jugular vein with adjacent edema, confirming the diagnosis of Lemierre's syndrome. The patient improved with continuous antibiotic and supportive care and was discharged home 4 weeks after admission.

Conclusion:

Lemierre's syndrome is a rare, often overlooked disease that should be considered when a young, otherwise healthy individual presents with severe sepsis and multiple septic emboli.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Brian Omslaer, DO; Omar Fareedi, DO

TITLE:

Retro-odontoid Pseudotumor/Pannus Resolution following Occipital-cervical Fusion

Purpose:

To contribute to the body of literature of the surgical management of retro-odontoid pseudotumor and to highlight occipital-cervical fusion as a viable surgical option in the setting of hypermobility about the occipital-cervical junction and the atlantoaxial joint.

Case description:

A 67 y.o. female presented with worsening neck pain with upper extremity radicular symptoms, hand clumsiness, and difficulties with balance. She also noted pain along the base of her skull and long-standing difficulties with swallowing. Imaging revealed diffuse idiopathic skeletal hyperostosis (DISH) through the sub axial spine (C2-C7), severe central stenosis and associated myelomalacia at the C1 level, large retro-odontoid pannus, and moderate stenosis from C3-C7. Her history of DISH had created hypermobility at the occipital-cervical junction and the atlantoaxial joint which subsequently led to the development of a large retro-odontoid pannus. This was treated with occipital-cervical fusion in which the cord was decompressed indirectly (through a C1 laminectomy and by the stability of the occipital-cervical fusion) to allow the pannus to shrink over time. At 24 months following surgery, she is asymptomatic, and advanced imaging demonstrates complete resolution of the pseudotumor.

Summary:

Retro-odontoid pseudotumor is a rare cause of cervical myelopathy. Its pathogenesis involves repetitive cycles of transverse ligamentous injury and subsequent repair that can occur through multiple etiologies. These can be treated through transoral approaches, odontoidectomies, or even lateral based approaches in which decompression is achieved through direct means. However, these approaches carry higher risk of morbidity than the indirect method described herein.

Conclusion:

We present a case report of a retro-odontoid pseudotumor secondary to DISH in a 67-year-old female with cervical myelopathy. This report highlights occipital-cervical fusion as a viable option in the treatment of retro-odontoid pseudotumors in the setting of hypermobility about the occipital-cervical junction and the atlantoaxial joint.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Cameron Benedict, MD; Indranil Sau, MD

TITLE:

Rapunzel Syndrome: An unusual presentation

Background:

Rapunzel syndrome is named after the 19th century Grimm Brother fairy tale and describes a trichobezoar that extends from the stomach into the duodenum. It is a rare condition, demonstrated by a literature review that recorded only 21 cases between 1968 and 2007 . It is mostly seen in young female patients with trichophagia and is rarely seen in males. The presentation varies and many patients require multiple imaging studies to diagnose it .

Case Description:

A 14 year old male presented with 2 months of intermittent abdominal pain with CT scan showing gastric wall thickening and multiple areas of small bowel wall thickening concerning for small bowel-to-small bowel intussusception and evidence of pneumatosis. His work-up and exam were benign and was discharged home to follow-up with GI. Outpatient EGD showed a large organized trichobezoar extending from the gastric fundus into the duodenal bulb. Attempts were made to remove the bezoar which were unsuccessful. Colonoscopy showed again an organized bezoar consisting of hair and fabric with multiple pieces of aluminum foil appreciated in the colon and terminal ileum. Following the procedure he complained of hematemesis, prompting him to present to the ED. He went to the OR with pediatric surgery and underwent exploratory laparotomy, gastrotomy with removal of bezoar, terminal ileum enterotomy and removal of bezoar, and jejunal enterotomy. The gastric bezoar extended into the duodenum and was successfully removed in one piece. The small bowel bezoar was several inches in length and was removed in one intact piece.

Conclusion:

Despite the plethora of imaging modalities available, the diagnosis of trichobezoar can still be very difficult especially when it presents as another surgical condition such as intussusception such as in this case. A high index of suspicion is often required to diagnose.

¹ S. Naik, V. Gupta, S. Naik et al., "Rapunzel syndrome reviewed and redefined," Digestive Surgery, vol. 24, no. 3, pp. 157-161, 2007.

¹ Fallon, Sara C, Slater Bethany J et al., "The Surgical Management of Rapunzel Syndrome: A Case Series and Literature Review," Journal of Pediatric Surgery, vol 48, no4, pp. 830-834, 2013.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Isaac Nivar, DO; Muzaffar Ali, DO; Anthony Kamson, DO; Raymond Dahl, DO

TITLE:

Acetabular Cup Positioning, Complications, and Patient Outcomes: A Comparison of Robotic posterior and Conventional Anterior THA

ABSTRACT

INTRODUCTION:

Controversy exists whether anterior approach (AA) total hip arthroplasty's (THA) early outcomes are improved compared to other surgical approaches. Early robotic-assisted posterior approach (rPA) THA studies show improved implant positioning, but its impact on functional outcomes has yet to be determined. The purpose of this study was to compare 1) implant position; 2) operative time; 3) hospital length of stay; 4) post-operative recovery; 5) complications, and 6) patient-reported outcome measures for patients who underwent rPA vs fluoroscopy based AA THA.

METHODS:

A retrospective review of 100 (49 rPA vs 51 AA) THA patient charts was performed. Patient demographics, operative time, and complications were assessed. Continued opioid and ambulatory device use were assessed at two-week follow-up. Radiographic implant positions were assessed by two independent surgeons utilizing Lewinnek and Callanan "safe zone" parameters. Harris hip score (HHS) and hip disability and osteoarthritis outcome score (HOOS) were reviewed at one year follow-up. Statistical differences were analyzed by unpaired t-test, Mann-Whitney U test, Chi-square test, and Fisher's exact test, as appropriate.

RESULTS:

Patient demographic were not statistically significant except BMI which was higher in rPA (36 vs 30.6, $p < 0.001$). Operative time, hospital LOS, intraoperative fractures, and dislocation rates were higher in AA THA. Lewinnek and Callanan "safe zone" were achieved in 48/49pts (97%) rPA while only 43/51pts (84%) in AA ($p < 0.05$). rPA cohort had less opioid and cane assistance usage at two-week follow-up (23 vs 32, $p < 0.05$; 14 vs 21, $p = 0.04$), respectively. HHS and HOOS were both significantly improved in rPA vs AA at one year follow-up (85.6 vs 82.7, $p = 0.004$; 89.3 vs 84.1, $p < 0.002$), respectively.

CONCLUSION:

Implant position, length of stay, HHS, and HOOS were superior in rPA despite higher BMI compared to AA THA. The rPA THA group required less opioids and ambulatory devices at two-week follow-up.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Patrick C. Hancock, MD

TITLE:

Precision Micropuncture—a Novel Approach to Augment Angiogenesis in Acellular Collagen Scaffolds

ABSTRACT

Purpose:

Deficiencies in tissue lead to functional impairment for the patient and exorbitant medical expenditures. Currently, reconstructive approaches with bioengineered constructs suboptimal secondary to the lack of rapid vascular integration of reconstructive constructs. Recently, we developed a microsurgical approach, termed ‘micropuncture’ (MP) for augmentation of scaffold angiogenesis emanating from a recipient vessel. However, understanding of the long-term effects of MP is lacking. We hypothesize that the MP-induced vasculature will continue to persist following prolonged scaffold implantation.

Methods:

Rat femoral vessels were punctured using a 60-um diameter needle at defined intervals prior to implantation of a collagen scaffold. The contralateral hindlimb served as a normal (non-MP) internal control. The vasculature and scaffold were circumferentially wrapped with a silicone sheet in 8 animals to isolate intrinsic vascular growth. In remaining animals (n=8), segments were not isolated from the extrinsic environment, allowing for both intrinsic and extrinsic (contiguous tissue) vascularization. At the four-week timepoint, animals underwent in situ fluorescence angiography. Vascular and histologic analysis was performed using ImageJ software (NIH). Statistical significance was defined as $p < 0.05$.

Results:

Following a four-week scaffold implantation period, mean vascular density was found to be increased in MP limbs when compared to non-MP internal controls across both silicone and no-silicone wrapped cohorts. MP dramatically increased the amount of intrinsic scaffold vascularization. MP effects also contributed to non-silicone wrapped collagen vascularization, but to a lesser degree.

Conclusions:

The angiogenic effects of our novel micropuncture technique continue to persist for at least four weeks. Our results suggest that MP has a profound impact on intrinsic vascularization emanating from the femoral vessels. Our findings suggest that micropunctured vessels act as an angiogenic pedicle which can support a graft on its own. However, contiguous tissues continue to be a reliable source for vessel ingrowth.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Shaan Sadhwani, DO

TITLE:

Preemptive multimodal oral analgesia in total joint arthroplasty: Gabapentin appears counterproductive

ABSTRACT

Hypothesis/Overview :

Perioperative pain control in total hip and knee arthroplasty ensures satisfactory patient outcomes, efficient recovery, and helps avoid post-operative complications. While traditional methods focused on opioids, multi-modal analgesia (MMA) has recently fallen into favor given the detrimental effects of opioid use. MMA has had clear success in improving patient outcomes and decreasing opioid use. However, a high degree of variability can be found in the literature regarding specific choices of medication regimens. The purpose of this study was to compare combinations of acetaminophen, gabapentin, meloxicam, and spinal anesthesia and determine their effects on short term patient outcomes.

Methods and Materials:

We performed a retrospective review of patients who underwent total joint arthroplasty at our institution between 2017 to 2019. From this period, 2,272 patients were included in this study. Primary outcomes included differences in visual analog scores (VAS) for pain, average daily morphine milligram equivalents (MME), and average daily feet ambulated among combinations of perioperative analgesia versus control group. Secondary outcomes included length of stay, adverse effects of medications, and disposition following discharge from the hospital.

Results:

Our data shows that pre-operative use of meloxicam only improved the percentage of patients discharged home, when compared to acetaminophen alone. Furthermore, we show that use of gabapentin, irrespective of additional preoperative medications, worsened primary post-operative outcomes when compared to acetaminophen alone. Lastly, we show significant evidence that spinal anesthesia pre-operatively improves primary measures within the first 24 hours. Amongst our patients, those receiving spinal anesthesia had significantly reduced VAS scores, reduced MME's, and ambulated further on post-operative day (POD)0.

Conclusion:

From this data, we postulate that the ideal MMA regimen includes scheduled acetaminophen, perioperative NSAIDs, and spinal anesthesia and avoids gabapentin to ensure more stable VAS scores, further ambulation on POD0, and a lower MME requirement during their stay.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Sibo Sun, DO; Leighann Panico, DO, MPH; Surena Namdari, M.D., M.Sc.

TITLE:

Long Head of Biceps Tendon Injuries: Biomechanics, Clinical Ramifications, and Management

ABSTRACT

Purpose:

To discuss recent updates in the literature regarding the function, pathophysiology, diagnosis, and management of long head of biceps tendon (LHBT) ruptures, with a specific focus on comparing surgical treatment options, including biceps tenotomy and tenodesis.

Background:

LHBT pathology covers a spectrum of pathologic conditions, including inflammatory tendinitis, degenerative tendinosis, over-use and traumatic causes. It is a common source of anterior shoulder pain that often occurs in conjunction with surrounding shoulder pathology, such as impingement and rotator cuff tears. Partial thickness LHBT tears are typically associated with tendonitis, while complete ruptures can cause a “Popeye” deformity due to tendon retraction distally. Patients usually report a history of overhead activities and localized pain in the bicipital groove. The best imaging modality for diagnosis of LHBT injuries and associated pathology is magnetic resonance arthrography. Nonsurgical management, including rest, activity modification, anti-inflammatory medications, physical therapy, and corticosteroid injections, is the first line of treatment. Failure of nonsurgical modalities, partial thickness tears, or LHBT subluxation are indications for biceps tenotomy or various tenodesis procedures.

Summary:

Optimal surgical management of the LHBT remains controversial. Although several studies report a higher incidence of “Popeye” deformity, muscle cramping, and pain in the bicipital groove after tenotomy compared to tenodesis, they have not identified significant differences in functional scores or patient satisfaction between the two techniques.

Conclusion:

Biceps tenotomy and tenodesis are both viable treatments for proximal biceps tendon pathology, yielding high patient satisfaction. To date, the literature does not provide evidence to support one technique over the other and demonstrates no significant differences in functional outcomes, including postoperative biceps strength, elbow or shoulder range of motion, and pain. However, cosmetic deformity and muscle cramping are more commonly associated with tenotomy.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Anthony O. Kamson, DO

TITLE:

An Insight on Lyme Prosthetic Joint Infection in Total Knee Arthroplasty: A Literature Review

ABSTRACT

PURPOSE:

Lyme prosthetic joint infection (PJI) is a rare occurrence, however, it is important to consider this disease as a possible cause of PJI's in endemic regions. The purpose of the study is to review all reported cases of Lyme PJI with the goal to raise awareness and initiate the development of a treatment algorithm.

BACKGROUND:

Diagnosis of a PJI remains difficult and when associated with Lyme disease, becomes very complicated. The Musculoskeletal Society Infection (MSIS) criteria are often used to assist in diagnosis, which include major and minor criteria. To diagnose a Lyme PJI, synovial fluid cultures must remain negative for any other organism, but synovial fluid Lyme PCR will be positive. Timely diagnosis and early intervention decrease the morbidity and mortality associated with PJI's.

SUMMARY:

A literature review was performed using Scopus and PubMed published reports of cases of PJI secondary to Lyme disease. Search terms included 'Lyme', 'Lyme disease', 'Culture negative', 'Total Knee Arthroplasty', 'TKA', and 'Prosthetic joint infection'. Only 5 reported cases were encountered. Each case was analyzed for diagnostic protocol, knee aspiration results, type of surgical intervention, antibiotics administered, and patient outcome. The regions most affected by Lyme disease are the Midwestern and Northeastern United States, which includes states such as Pennsylvania, Maine, Illinois, and Minnesota. An untreated Lyme PJI has the potential to develop biofilms and form metalloproteinase enzyme which can cause implant loosening leading to negative outcomes. All patients treated with surgical intervention had an asymptomatic, functional total knee at their latest documented follow up.

CONCLUSION:

We believe that Lyme disease should be of higher suspicion as a possible cause of PJI's in endemic areas. Acknowledging the available literature, debridement, antibiotic, and implant retention (DAIR) as a treatment for Lyme PJI may be a viable treatment option for patients diagnosed with Lyme PJI.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Christopher Ferguson, DO; Nathan Angerett DO; Alex Yevtukh DO

TITLE:

Effects of a perioperative renal protocol on postoperative acute kidney injury rates following total joint arthroplasty

ABSTRACT

Stated purpose:

The purpose of this study is to determine the post-operative acute kidney injury (AKI) rates of patients who have undergone a total joint arthroplasty (hip/knee) following the implementation of a perioperative renal protocol and compare that to the rate prior to this protocol.

Methods:

This study is a retrospective data analysis of all total joint arthroplasty patients from November 1, 2016 to January 1, 2018 (control group – pre protocol implementation) compared to all total joint arthroplasty patients from July 1, 2018 to February 2, 2020 (experimental group – post protocol implementation). Primary outcome measure includes postoperative diagnosis of acute kidney injury within 90 days of surgery. Secondary outcome measures include readmission to the hospital and if dialysis was required. The data for this analysis was collected from UPMC Pinnacle Legacy Hospital Sites, and includes the above-mentioned outcome measures as well as the following: age, gender, BMI, lab values (creatinine, BUN, GFR) pre/post operative medications, medical co-morbidities, past surgical history, surgical date, readmission date (if applicable).

Summary:

There was a significant decrease in post-operative rates of AKI, need for dialysis, and readmission rates in patients who have undergone total joint arthroplasty (hip/knee) and received the renal prophylaxis protocol compared to patients who have undergone total joint arthroplasty (hip/knee) prior to implementation of the aforementioned protocol.

Conclusion:

Patients undergoing total joint arthroplasty (hip/knee) have a significantly decreased risk of AKI when receiving the renal protocol in the perioperative period.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

David Phillips, DO; Muzaffar Ali, DO; Anthony Kamson, DO; Isaac Nivar, DO; Raymond Dahl, DO

TITLE:

Learning Curve of Robotic-Assisted Total Knee Arthroplasty for Non-Fellowship-Trained Orthopedic Surgeons

ABSTRACT

Background:

Total knee arthroplasty (TKA) serves as a reliable treatment option for patients with end-stage arthritis, but patient dissatisfaction rate remains high. With the projected increase in the volume of arthroplasty operations, surgeons have aimed for methods in which to improve the patient outcomes. Robotic-assisted TKA has become increasingly popular. The learning curve for such technology has been investigated, but these prior studies have only been performed by fellowship-trained arthroplasty surgeons. The goal of this study was to investigate the learning curve for non-fellowship-trained orthopedic surgeons in order to ameliorate any concerns about increased operative time.

Methods:

Retrospective analysis of robotic-assisted TKAs and manual TKAs, performed by two non-fellowship-trained orthopedic surgeons, was conducted on a total of 160 patients. For each individual surgeon, the robotic-assisted TKAs were divided into 3 cohorts of 20 consecutive patients. Data from 20 consecutive manual TKAs was also gathered for each surgeon. The mean operative times were compared. Cohorts were then grouped together for both surgeons and compared in a similar fashion.

Results:

For Surgeon 1, mean operative times were significantly increased for robotic-assisted cohorts compared to the manual cohort. For Surgeon 2, the first robotic-assisted cohort was significantly longer. However, there were no significant differences for the second and third robotic-assisted cohorts. In the combined surgeon group, there was no significant difference between operative times for the third robotic cohort and the manual cohort.

Conclusion:

This study demonstrates that the general orthopedic surgeon in a community hospital may be able to adequately perform robotic-assisted surgery in a similar timeframe to their manual TKA within their first 40 RATKAs.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Inderpreet Singh, DO; Muzzafar Ali, DO

TITLE:

Early Superior Clinical Outcomes in Robotic Assisted TKA Compared to Conventional TKA in the Same Patient: A Comparative Analysis

ABSTRACT

Introduction:

Robotic assisted total knee arthroplasty (RA-TKA) has demonstrated improved alignment and outcome scores when compared to manual total knee arthroplasty (M-TKA); however few studies compare differences in the same patient. This study assesses clinical outcomes in patients who underwent a primary RA-TKA and had a prior contralateral M-TKA.

Materials:

This study is a retrospective review on 23 patients who underwent primary RA-TKA who underwent prior contralateral M-TKA. All surgeries performed by a single surgeon at the same institution.

Methods:

Patients were assessed for differences in hospital length of stay, improvement in pre- vs. post-operative range of motion, Knee Injury and Osteoarthritis Outcome Score (KOOS) and Western Ontario and McMaster Universities Arthritis Index (WOMAC) scores. Student t-test was utilized to detect significant differences.

Results:

Patient demographics showed a mean age of 64.9 ± 7.5 , 17 females (74%), and mean Body Mass Index (BMI) of 36 ± 6.2 . The average follow-up time was 2.95 years for M-TKA and 1.2 years for RA-TKA. Hospital length of stay was decreased by 6.4 hours for RA-TKA ($p=0.002$). Total post-operative WOMAC score was not statistically different between RA-TKA and M-TKA ($p=0.11$); however pain and stiffness components were statistically improved in RA-TKA ($p=0.035$ and $p=0.007$), respectively. KOOS was higher in RA-TKA, which approached statistical significance ($p = 0.005$). Pre- vs. post-operative knee flexion improved > 10 degree in 19 (83%) after RA-TKA but in only 13 (56.5%) after M-TKA, which showed statistical significance ($p=0.005$). There were no post-operative complications.

Conclusion:

Patients who underwent RA-TKA demonstrated early improvement at one-year follow up in pain, stiffness, and knee flexion when compared to their prior contralateral M-TKA. There was a significant decrease in post-operative length of stay by 6.4 hours in the RA-TKA group. Limitations include a small sample size and differences in follow-up times between RA-TKA and M-TKA.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Bradley Lazzari, DO

TITLE:

Open Versus Closed Intramedullary Nailing of Humeral Shaft Fractures

ABSTRACT:

Intramedullary nailing (IMN) of humeral shaft fractures has been heralded for its minimally invasive approach, preservation of fracture biology, decreased blood loss, and early weight bearing. With the popularity of this technique many questions remain unanswered. Closed IMN is the preferred technique, however there are circumstances when exposure of the fracture becomes necessary. Circumstances warranting exposure include inability to achieve adequate reduction, concern for radial nerve entrapment, and surgeon preference. It is unclear from the literature whether opening the fracture is detrimental to union, infection, and iatrogenic radial nerve injury. This study investigates the outcomes of selected open IMN compared to closed IMN.

A Retrospective review was performed on patients presenting to a tertiary care center between January 2007 and September 2020 with a midshaft humerus fracture treated with IMN. Exclusion criteria were: preoperative radial nerve palsy, open fracture, or pathologic fracture. The null hypothesis in this study is that there is no difference between open and closed IMN with respect to union, infection, and iatrogenic radial nerve injury. Student's t-tests and Two-proportion Z-tests were used to identify significant differences in patient demographics and operative outcomes.

There were 70 humeral IMN in the final cohort. 56 were performed closed and 14 were performed with open reduction. There was 1 instance of postoperative radial nerve palsy in the closed group. There were 4 nonunions in the closed group and 1 nonunion in the open group. There was no significant difference in rate of postoperative radial nerve palsy (1.8% vs. 0%, $p=0.62$) or nonunion (7.1% vs. 7.1%, $p=1.00$) between the groups. There were no instances of infection in either group.

There was no difference in non-union, infection or iatrogenic radial nerve palsy between groups. Should a surgeon need to open the fracture there is shown to be no additional risk conferred.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Michael Marcinko, DO; Bradley Lazzari, DO

TITLE:

Assessment of Autograft versus Allograft in Primary Anterior Cruciate Ligament Reconstruction

ABSTRACT

Purpose:

While there is a vast amount of literature on autografts used in anterior cruciate ligament (ACL) reconstruction, there is minimal information on the subtypes of allografts that can be implemented in this procedure. Previous studies have shown higher re-rupture rates in young athletes using allografts, however inconsistencies among allograft processing make it difficult to ascertain the reason for failure. Our study will examine ACL reconstruction with achilles tendon allografts performed by a single Sports fellowship trained orthopedic surgeon. We hypothesize the re-rupture and revision rates will be similar to the gold standard autografts.

Methods:

A retrospective analysis of the electronic medical record identified 160 patients who had had ACL reconstruction with achilles tendon allografts between February of 2015 to January of 2021. Their charts were reviewed for operative information, and the patients were contacted via telephone where complications such as re-rupture, International Knee Documentation Committee (IKDC) scores, and need for further surgery after initial intervention were discussed. IKDC scores allowed the study to classify subjective categories such as symptoms, sports activity, and knee function into an objective score that could portray patient satisfaction. Future plans of the study are to calculate the rate of re-rupture in achilles tendon allografts and compare to autograft rupture rate. Additionally, we will stratify the patient demographics into age to further assess if there are differences in age groups.

Results:

Pending

Conclusion:

We predict ACL reconstruction with achilles allograft will have equivalent re-rupture or revision rates as compared to the ACL performed with autografts.



LIFE CHANGING MEDICINE

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Kathryn McCabe, DO; Charlotte Floria, DO; Tylee Rickett MD; Harold Yang, MD PhD

TITLE:

Surgical Resident Attributes Contributing to Success on the ABS Qualifying Exam: A Multivariate Analysis

ABSTRACT:

Training competent, safe, general surgeons is the primary goal of any surgical training program. This process begins years before graduation, with the resident selection process. It ends with successful fulfillment of the American Board of Surgery requirements, including a written "qualifying exam," (QE) and an oral certifying exam.

We hypothesize that some resident characteristics identified during the interview process, such as performance in clerkships, work experience prior to medical school, and undergraduate performance can predict future success. We also looked at performance on the ABS annual in-service exam "ABSITE," and its correlation with first-time pass rates on the QE.

We collected data on our residents in our program who graduated or otherwise left our program in the last 10 years. Our data examined original application packets, ABSITE scores, and email survey results. We summarized this data and looked at the percentile differences between residents who successfully passed the QE on their first attempt, and those residents who did not pass.

Due to our small sample size and single-center data set, we are unable to reach statistical significance with any single variable. We found that those who had honors in their surgery clerkship were more likely to pass the QE on the first try. Those who did not achieve honors were more likely to leave the program prior to graduation. We found that our top-ranked individuals were not significantly more likely to pass the QE on the first try. We also observed that scoring greater than the 15th percentile on ABSITE in the chief year strongly correlated with success on the qualifying exam. This supports a continued holistic view of applicants as they apply to our program and continued focus on ABSITE performance as key to helping our graduates succeed on the QE.



Poster Presentations

Medical Track

Medical Education Day 2022

Medical Track - Poster

	TYPE	AUTHOR(S)	TITLE
1	CASE	Jenna Van Dusen, DO	Stevens-Johnson Syndrome
2	CASE	Aslan Amirian, MD	Myositis a Rare Manifestation of DIG infection
3	CASE	MHD Majed Abdul Wahab, MD	Underlying Etiology of Hemorrhagic Stroke
4	CASE	Iuliia Kovalenko, MD, Pooja Roy, MD, Konstantin Golubykh, MD, Kit Lu, MD	Myelodysplastic Syndrome Caused By De-Novo Tp-53 Mosaic Mutation In A Breast Cancer Patient Treated With Chemotherapy And Radiation Therapy
5	CASE	James Farrell, DO	I Can't Feel My Feet When I'm With You
6	CASE	Scot Seifert, DO	Trapezium Fracture Secondary to Direct Trauma
7	CASE	Kevin Groff, DO	Worsening hoarseness in a 74-year-old male with history of alcohol and tobacco use. Squamous Cell Carcinoma
8	CASE	Raffi Keradman, DO	Pediatric Lump
9	CASE	Adam Devine, DO	Diagnostic Challenges of Sarcoidosis
10	CASE	Emily Schuchardt, DO	The Mole That Took Her Life
11	CASE	Kinza Salim, DO	Legionnaire's Disease
12	CASE	Arjun R. Vyas, DO	Bump, Blow and Broken Hearts
13	CASE	Shaunaq Parikh, DO	Frowning Glabella
14	CASE	Christopher Casagrande, DO	Stroke Symptoms from Malignancy: A Case Report
15	CASE	Hussam Mahmood, DO	Iatrogenic Hemidiaphragm Paralysis Following Thoracotomy In A Patient With Arteria Lusoria: A Case
16	CASE	Connor Murphy, DO	An Interesting Case of E. Coli Pleural Effusion

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Jenna Van Dusen, DO

TITLE:

Stevens-Johnson Syndrome

ABSTRACT

Introduction:

Stevens-Johnson Syndrome is a severe mucocutaneous reaction characterized by necrosis and detachment of up to ten percent of the epidermis. It holds a mortality of ten percent for up to one year after onset of symptoms. Thankfully, this syndrome is rare with an estimated incidence of two cases per million people per year. Most often, this reaction is triggered by medications that are commonly prescribed in medical practice.

Case:

An eighty-eight-year-old female presented to an outpatient family medicine office for chills, dysuria, and frequency of micturition. Urine dip was performed in the office and was consistent with infection. Patient denied allergies to any known drugs. She was started empirically on double strength trimethoprim-sulfamethoxazole twice daily for three days in accordance with up-to-date first line therapy for uncomplicated cystitis.

Two weeks after initiation of antibiotic, patient re-presented to the office for fatigue and tightness/weakness in her legs. Vital signs were within normal limits. Physical examination was unremarkable. Work-up was initiated to assess for common causes of fatigue including anemia, exacerbation of congestive heart failure, Lyme Disease, electrolyte abnormalities and acute renal failure.

Prior to completion of work-up above, patient was driven to emergency department at UPMC Community Osteopathic for weakness and rash. Patient had a rapidly progressing desquamating rash involving oral and vaginal mucous membranes. She was diagnosed with Stevens-Johnson Syndrome and transferred to Crozer burn center where she completed a fourteen day stay with successful treatment.

Discussion:

In a family medicine clinic, many of the common medications prescribed can result in Stevens-Johnson syndrome. Antibacterial sulfonamides are amongst these agents. Fevers, malaise, and myalgias commonly proceed the mucocutaneous lesions by one to two days. It is important for providers to keep this syndrome on his/her differential when patients present with vague symptoms after starting an at-risk agent.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Aslan Amirian, M.D

TITLE:

Myositis as a rare manifestation of DIG infection.

ABSTRACT

Introduction:

Disseminated gonorrhea infection (DIG) is a rare manifestation of Gonorrhea infection occurring in 0.5 to 3% of all cases. Myositis is an exceedingly rare manifestation of DIG and has only been reported few times in literature.

Case presentation:

This is a case of a 34-year-old male with a history of ecstasy abuse who presented to emergency room with a chief complaint of left hand and left foot swelling. A week earlier he presented to ED with the same presentation stating swelling occurred after using ecstasy and was discharged with the 3day course of steroids which relieved the symptoms. After using ecstasy again, he developed the same symptoms with an inability to bear weight on his foot. He denied previous similar reactions, animal bite, trauma, IVDU. He denied fever, chills, penile discharge, or dysuria.

Swelling, redness, and tenderness on dorsal of the left 3rd MCP joint and left foot and ankle was noticed. Initially the fluid from the left hand MCP joint was sent for gram stain and cultures.

X-rays of hand and foot did not reveal any bone abnormalities. Hand MRI demonstrated small fluid collection over 3rd MCP joint, and Foot MRI concluded multiple small joint effusions without osseous abnormality and myositis of interosseous muscles. Patient was admitted with diagnosis of sepsis secondary to cellulitis and was started on vancomycin and Cefepime. Other lab results including blood cultures, uric acid and urine culture for STDs were obtained which were negative. Concerned for rare manifestations of autoimmune diseases due to myositis, markers were sent which were positive for ANA 1:80 and elevated Anti-CCP.

On 4th day of admission, the synovial cultures grew N. Gonorrhea and patient was diagnosed with DIG.

Discussion:

This case illustrates the importance of synovial culture for diagnosis of DIG and myositis as a rare manifestation of it.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

MHD Wajed Abdul Wahab, MD

Title:

Underlying Etiology of Hemorrhagic Stroke

Introduction:

Cerebral amyloid angiopathy is an important cause of intracerebral hemorrhage, its prevalence increases with age. We present a case of a 65 year-old gentleman who presented to the hospital with hemorrhagic stroke and was later found to have cerebral amyloid angiopathy.

Case presentation:

A 65 year-old gentleman with past medical history of hypertension and intracranial hemorrhage presented to the hospital with expressive aphasia that was preceded by headache, his systolic blood pressure was found to be in the 160s and his diastolic blood pressure was found to be in the 90s, neurological exam was negative for other neurological findings, CT head was showing an acute intraparenchymal hemorrhage in the left parietal temporal junction that measured 2.7 x 2x 1.8 cm with extension of the blood into the subarachnoid space in addition to a small focus of subarachnoid blood within the left posterior parietal vertex. CTA head did not show vascular malformations nor aneurysms. MRI brain was done and it was showing numerous rounded focal areas of hemosiderin deposition suggesting the presence of cerebral amyloid disease. Patient's blood pressure was well controlled, and he was discharged after an uneventful hospital course.

Discussion:

The etiology behind intracerebral hemorrhage in an elderly patient can be identified on MRI. Initial workup for stroke usually include CT head to detect intracranial hemorrhages, and in order to identify the underlying pathology, CTA can be used to look for AVMs, aneurysms and vasculitis. In our case, even though the patient had a past medical history of intracranial bleeding, and his blood pressure was elevated upon presentation, cerebral amyloid angiopathy was found and this would be overlooked if MRI was not done.

Conclusion:

MRI should be considered in elderly patients who present with intracranial bleeding, especially if CT scan and CTA don't reveal the etiology.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Iuliia Kovalenko, MD; Pooja Roy, MD; Konstantin Golubykh, MD; Kit Lu, MD

TITLE:

Myelodysplastic Syndrome Caused By De-Novo TP-53 Mosaic Mutation In A Breast Cancer Patient Treated With Chemotherapy And Radiation Therapy

ABSTRACT

INTRODUCTION:

The TP53 gene mutation is one of the most common genetic abnormality implicated in various cancers development. The prevalence of TP53 mutation in various myelodysplastic syndromes (MDS) is high and may reach 11% as according to some studies [1]. Moreover, it often serves as a predictor for poorer chemotherapy response and overall prognosis as it confers an immunosuppressive phenotype against cancer cells [2]. Preexisting somatic mutation of TP53 gene is known to cause high risk treatment related MDS with complex karyotype and gene amplifications in breast cancer patients. Here we present a rare case of treatment resistant MDS in a patient with preexisting TP53 somatic mosaicism following chemotherapy and radiotherapy for breast cancer.

CASE REPORT:

84-year-old woman presented to the hospital with a 2-week history of generalized weakness, fatigue, and weight loss. Patient's past medical history was significant for breast cancer status post chemotherapy and radiation. Laboratory workup revealed thrombocytopenia, anemia with decreased reticulocyte count, elevated ferritin, and low vitamin B12 level. Due to the prior history of TP53 somatic mosaicism as well as ER/PR negative and HER2 positive breast cancer she was consulted by hematology/oncology. She received PRBC and platelet transfusions and was started on B12 therapy. Bone marrow biopsy showed complex karyotype, including 5q deletion and 6q deletion consistent with therapy related MDS. Her International Progression Scoring System assessment results showed high risk MDS conferring a median survival to be less than 6 months. Patient was referred to hospice and died less than 6 months later.

CONCLUSION:

Preexisting somatic mutation of TP53 gene may cause high risk treatment related MDS with complex karyotype and gene amplifications in breast cancer patients after chemotherapy and radiotherapy.

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MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

James Farrell, DO

TITLE:

I Can't Feel My Feet When I'm With You

ABSTRACT

Purpose:

The purpose of this case study is to review an atypical presenting symptom, Acute Transverse Myelitis, of Multiple Sclerosis.

Background:

Acute Transverse Myelitis is a rare, acquired neuro-immune spinal cord disorder that can present with rapid onset of weakness, sensory alterations, and bowel or bladder dysfunction.

Case:

The patient is a 44-year-old African American male with no significant past medical history. He originally presented to the Emergency Room with chief complaint of abdominal and lower extremity numbness bilaterally, which started 2 weeks prior to presentation. The numbness gradually progressed down bilateral lower extremities to the bottom of his feet. He also stated that he had anorgasmia. Magnetic resonance imaging of the thoracic spine showed expansion of the thoracic cord with abnormal signal centrally within the cord extending from the T8/T9 level to the T10/T11 level, with associated abnormal enhancement at this level. Additional focus of abnormal increased signal within the spinal cord at the T12/L1 level. He was diagnosed with Acute Transverse Myelitis and started on high dose IV steroids. Patient did have MRI of the brain which showed evidence of demyelinating disease and as well as having a lumbar puncture showing oligoclonal immunoglobulin G bands, ultimately diagnosing the patient with Multiple Sclerosis.

Summary:

Acute Transverse Myelitis was the presenting symptom of Multiple Sclerosis in a 44-year-old African American male.

Conclusion:

Acute Transverse Myelitis is a rare presenting symptom of Multiple Sclerosis. It is important to keep this in mind when evaluating a patient who present with atypical neurological symptoms both in an emergency setting and clinical setting.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Scott Seifert, DO

TITLE:

Trapezium fracture secondary to direct trauma

ABSTRACT:

Introduction:

The trapezium is a carpal bone of the distal row. Trapezium fractures account for <1% of all fractures, 1-5% of all carpal fractures, and isolated trapezium fractures are even less common. They can be difficult to identify by plain radiographs and can be missed on initial presentation. These fractures can be treated conservatively or with surgical intervention depending on displacement and concomitant injuries. Fractures of the trapezium body are most common and can result from a variety of injury mechanisms. Due to the trapezium's role in gripping and pinching, fractures should be identified and treated early.

Case Presentation:

A 16 y/o female field hockey player presented with one day of right thumb and wrist pain. She was struck by the ball on the volar aspect of her wrist. Exam was significant for ecchymosis and tenderness over the thenar eminence. Tenderness at the snuffbox. Limited range of motion, and difficulty with opposition of thumb to pinky. Right hand and wrist x-rays were negative for osseous abnormalities. She had significant pain while simulating gripping a field hockey stick. She was fitted for a removable thumb spica splint and was to follow up in 10 days for re-evaluation. At her follow up appointment, she had minimal improvement in pain. Repeat wrist x-rays again did not show evidence of fracture. MRI was ordered, which showed edema and fracture of the trapezium body without displacement. She was placed in a thumb spica Exos cast with planned four to six weeks of immobilization. CT obtained 5 weeks later shows no evidence of fracture. She had complete resolution of pain at follow up appointment and was cleared to return to play.

Discussion:

This case illustrates the importance of early immobilization and pursuit of advancing imaging to accurately diagnose an occult trapezium fracture.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Kevin Groff, DO

TITLE:

Worsening hoarseness in a 74-year-old male with history of alcohol and tobacco use. Squamous cell carcinoma.

ABSTRACT:

Background: Head and neck cancers represent 3% of malignancies in the U; squamous cell carcinoma is the most common subtype. Primary risk factors associated with head and neck cancer include tobacco use and alcohol consumption.

Case:

74-year-old male presented to his Primary Care Provider with hoarseness and increased secretions. The hoarseness began 10 years prior but had been worsening over the last 6 months. He had a 20-year smoking history, although he quit smoking 13 years prior. He admitted to drinking alcoholic beverages 3 times weekly. Physical exam was unremarkable.

Patient was referred to Otolaryngology, and video stroboscopic laryngeal exam was performed. Findings were remarkable for leukoplakia for the full length of the left true vocal cord and focal area of leukoplakia on the right true vocal cord. Patient also now developed hematemesis. Microlaryngoscopy with biopsy was recommended by Otolaryngology. Biopsy showed high grade dysplasia on the left true vocal cord and high-grade dysplasia on the right true vocal cord. Superficial invasive squamous cell carcinoma could not be ruled out on the right true vocal cord. After review by multidisciplinary head and neck tumor board, it was determined that further biopsy would be prohibitive, and radiation therapy was initiated.

Summary:

Squamous cell head and neck cancer five-year overall survival in patients with stage I or II disease is typically 70-90%, most cases present at later stages. Definitive diagnosis typically requires biopsy. Treatment consists of primary surgery or definitive radiation therapy.

Discussion:

Early recognition of symptoms and prompt treatment is key. Advanced (stage III/IV) disease is associated with a high risk of both local recurrence and distant metastases. Close early follow up is essential, as 80-90% of recurrences occur within 4 years of initial diagnosis.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Raffi Keradman, DO

TITLE:

Pediatric Lump

ABSTRACT

Introduction:

Baker's Cyst is a distension of a bursa within the popliteal fossa, usually the gastrocnemius-semimembranosus bursa on the medial side of the knee. Popliteal cysts are relatively common in adults and are often secondary to degenerative or inflammatory joint disease or joint injury; they usually communicate with the adjacent knee joint space, especially in older patients with knee pathology.

Case:

Six-year-old male presented to the pediatrician, accompanied by his mother, for a lump in his leg. His mother first noticed the boy to have a limp while he walked and ran, and when she went to investigate, noticed the lump. The child had not had any fevers, recent infections, or cuts to his extremities. The home in which the boy lives does not have pets, although he does frequent other friends' homes who do have cats and dogs. The boy could not tell us whether he had been bitten or scratched recently.

Upon examination, the boy had a multi-nodular mass in medial aspect of his right lower extremity, which was 3-4 cm in diameter, freely mobile and non-tender. The mass was evident in full extension but became less easily palpable in knee flexion. Initial complete blood count with differential, inflammatory markers were within normal limits. A Bartonella panel (including Henselae and Quintana) IgG and IgM were negative. Ultrasonography of the lower extremity was eventually completed, showing a 5.6 x 3.7 x 1.4 cm simple cyst with extension between the medial gastrocnemius and semimembranosus, consistent with primary Baker's Cyst. The family was informed and assured of the most likely self-resolution of the patient's condition and to discontinue antibiotics.

Discussion:

In children, popliteal cysts are much rarer and are usually a primary process, arising directly from the gastrocnemius-semimembranosus bursa; they do not communicate with the joint space.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Adam Devine, DO

TITLE:

Diagnostic Challenges of Sarcoidosis

ABSTRACT

Introduction:

Sarcoidosis is a multisystem disorder of unknown etiology characterized by noncaseating granulomatous inflammation. Given the wide array of clinical findings sarcoidosis could masquerade as more aggressive and time sensitive conditions like malignancy. Sarcoid is confirmed by its clinical, radiologic and histologic findings. We present a case presumed to be metastatic lung cancer, later confirmed as sarcoidosis post VATS with lung and lymph node biopsies.

Case Presentation:

Our patient is a 53-year-old healthy male who presented with progressive dyspnea on exertion over the last two years, night sweats, back pain and new onset dry cough. Labs were significant for mild hypercalcemia, negative rheumatologic workup, and negative ACE levels. EKG revealed RBBB, and prolonged PR interval. Echocardiogram was unremarkable. Initial chest x-ray was significant for right perihilar mass. CT chest confirmed mass. PET-CT showed central parenchymal density that has confluent hypermetabolism consistent with bilateral neoplasm and evidence of metastatic adenopathy in the neck, mediastinum, and hila. Metastatic periportal adenopathy and skeletal metastatic disease were also noted. Due to persistent infiltrates and PET positivity patient underwent EBUS and VATS with lung and lymph node biopsies to determine staging. EBUS results were inconclusive. Tissue pathology from VATS revealed noncaseating granulomatous inflammation. Patient was referred to pulmonology for treatment for sarcoidosis.

Discussion:

Sarcoidosis may affect any organ in the body and present with a myriad of signs and symptoms. It is a diagnosis of inclusion. Diagnostic workup includes chest x-ray, CT chest and tissue biopsy. In our patient, lymph node needle biopsy was inconclusive requiring VATS. PET scans are an expensive modality not recommended for standard sarcoidosis workup. Our case highlights that sarcoidosis can mimic malignancy and the importance of keeping a broad differential. Furthermore, lung and lymph node biopsy in correlation with radiologic findings are crucial to confirm diagnosis and avoiding unnecessary studies.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Emily Schuchardt, DO

TITLE:

The Mole That Took Her Life

ABSTRACT:

This case details the tragic story of a mother who lost her life to malignant melanoma. This 42-year-old woman initially presented to her primary care physician with an exophytic mass, 10 cm x 7 cm in size, on the upper portion of her back. The mass had been present for approximately nine to twelve months and had been growing, draining and causing her more pain. After initial evaluation, a punch biopsy of the lesion was performed and revealed malignant melanoma. She quickly underwent evaluation from oncology and was found to have metastasis of her liver, bones, adrenals, spleen and lungs. Given the extent of her disease and metastases, resection was not an option. She initially planned to trial chemotherapy, however, her condition soon deteriorated. She eventually had severe complications due to her tumor burden including severe hemorrhage from the lesions and sepsis. She was treated with palliative care and unfortunately passed away within one month of her presentation.

This case examines the late presentation of aggressive malignant melanoma. It details the sheer destruction of neoplastic cells. The pathology of this case highlights the importance of early detection and intervention. However, it also questions the barriers that may be present for woman seeking medical care. Are there barriers that stopped a woman with a mole from seeking an evaluation prior to that mole turning into a 10 cm x 7 cm mass? The purpose of this case is to not only discuss malignant melanoma but to discuss access to medical care, rapport with the medical community and potential interventions that may have saved this mom's life.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Kinza Salim, DO

TITLE:

Legionnaire's Disease

ABSTRACT

Purpose:

To demonstrate and highlight the importance of recognizing Legionnaire's disease as an etiology of community-acquired pneumonia

Background:

60-year-old female presents to the emergency department due to altered mental status and increased fatigue. The patient stated she suddenly began to feel extremely tired 2 days prior to presentation and progressively worsened while at home. She described it as just "feeling sleepy all day long." She also reported some nausea and dry heaving. She states that her daughter attempted to wake her up this morning but the patient simply could not wake up. For this reason, the daughter called EMS. The patient did note to have a productive cough and a "pounding" headache. She denied having any shortness of breath, chest pain, chest tightness, dysuria, bloody stools.

In the ED, patient met SIRS criteria with WBC of 17, HR 112, RR of 38, temperature of 39.3. Chest x-ray revealed airspace opacity within base of the right lower lung zone concerning for infiltrative process. She was admitted with sepsis due to pneumonia, began treatment with ceftriaxone and azithromycin for community-acquired pneumonia. She clinically did not respond to the treatment, and required transfer to ICU with multifocal pneumonia, metabolic encephalopathy and hypercapnic respiratory failure. Her antibiotics were switched and more tests were ordered including a legionella urine antigen which came back positive. Treatment was changed to intravenous azithromycin for a 14-day course. She improved clinically and was discharged home on 2L of oxygen.

Summary and Conclusion:

Legionnaire's disease comprises 1 to 10 percent of cases of community-acquired pneumonia. Pneumonia caused by legionella can be severe requiring intensive care unit admission. It is important to recognize and diagnose early not only to decrease mortality associated with Legionella infection but also to identify any sources of outbreaks.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Arjun Vyas, DO

TITLE:

Bump, Blow and Broken Hearts

ABSTRACT

Takotsubo Cardiomyopathy, also known as stress cardiomyopathy or “broken heart syndrome,” is a transient akinesis of the left ventricular apex, often resulting in symptoms similar to acute coronary syndrome (ACS). The event is often precipitated by acute emotional or physiologic stressful event, leading to a significant catecholamine release to the ventricular walls. Identification of TCM is key, as complications include left heart failure, cardiogenic shock, ventricular arrhythmias and even free-wall rupture. Fortunately, with proper diagnosis and serial management, nearly 95% of patients experience complete recovery within 8 weeks of diagnosis.

TCM work up is much like standard cardiac work up and includes a troponin, brain natriuretic peptide level (BNP), an echocardiogram (ECG), transthoracic echocardiography (TTE) and cardiac angiography. Unlike ACS or congestive heart failure (CHF), which are defined by positive troponins, BNP, ECG and TTE, the cardiac work up for TCM is confirmed by a negative cardiac angiography that shows normal coronary arteries as well as transiently positive findings of the aforementioned diagnostics.

S.S., a 68-year-old female without cardiac disease, presented to Community General Osteopathic Hospital (CGOH), for sudden, typical ACS symptoms and anxiety. Following the patient’s arrival to the CGOH emergency department, a cardiac work-up was started and a urine drug screen was found to be positive for cocaine; the patient was subsequently admitted. TCM was confirmed by a normal cardiac catheterization. Treatment for TCM is dependent on associated symptoms and laboratory findings, and is often similar to ACS or CHF treatment. While treatment for ACS or CHF is indefinite, treatment for TCM is not.

Following extensive counseling during hospitalization and at transition of care appointment, S.S. ceased cocaine use. She also consented to medical management for her anxiety and has not had any recurrence of similar symptoms. She has since had two echocardiograms that showed normal ejection fractions.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Shaunaq Parikh, DO

TITLE:

Frowning Glabella

ABSTRACT:

Herpes zoster ophthalmicus (HZO) is a serious form of viral diseases caused by reactivation of the varicella zoster virus in the ophthalmic division of the trigeminal nerve and most common presentation is a unilateral painful vesicular rash. It may present with or without ocular involvement and may be preceded by prodromal symptoms. Sequela could include blindness if left untreated.

67-year-old Female initially presented with complaints of unilateral headache and eye swelling. On physical exam Left hemi forehead appeared erythematous but lacking any vesicular lesions on the face. Rash appeared to be cellulitis however it was not tender to palpation and had a sharp demarcation. Swelling of the ipsilateral eyelid was also evident. Visual acuity and extra ocular movements were intact and painless. Patient stated her pain was limited to ongoing recurrent headaches for the past week which resembled her migraine headaches. She attempted to apply topical analgesic cream Bengay to her forehead in order to attain some relief prior to this evaluation. There were multiple possible etiologies to the rash given the physical findings on the forehead and around the eyes. Also, the patient's history of applying topical pain relief cream on face could indeed lead to contact irritation, especially if some product got into the eyes. Trauma, infection and allergic etiologies were also in the differential given the swelling of the eyelids. Rash did appear cellulitic but it is extremely rare to have HZO and associated cellulitis. Hence diagnosis was difficult and relied on level of suspicion and severity of complication if left untreated. Sharp vertical demarcation of erythematous rash just left of the glabella increased suspicion of HZO warranting emergent ophthalmic evaluation and treatment with IV acyclovir. This atypical painless non vesicular presentation was rare and worth consideration when evaluating similar patient presentation.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Christopher Casagrande, DO

TITLE:

Stroke Symptoms from Malignancy: A Case Report

ABSTRACT

Case:

A 73-year-old female presented to the hospital secondary to progressive left-sided motor deficits. A computed-tomography (CT) scan was performed which showed an intracranial lesion in the right parietal area. Patient then had further workup including an MRI of the brain to further quantify the size of the lesion with diagnosis of glioblastoma. Prompt referral to neurosurgery at Johns Hopkins Medicine was made and surgical resection of the neoplasm was performed. The patient was placed on steroids as well as seizure prophylaxis and has been continuing with rehabilitation. The patient has regained most of the function in her left side.

Summary:

Glioblastoma are considered high-grade malignant neoplasms that are classified based on their histopathologic characteristics. Clinical signs and symptoms can vary based on area of involvement of the neoplasm. Focal deficits are common in glioblastoma and are generally common in high-grade gliomas. The best imaging modality in diagnosis of glioblastoma is contrast-enhanced MRI. Patient management should be focused on surgical resection, genetic testing and histopathologic classification of the glioblastoma. Symptom management can be focused on reduction of localized edema around the neoplasm as well as chemotherapies based on pathologic results. Glioblastoma is associated with poor outcomes and has a average prognosis of 7.5-17.5 months. Surveillance of the lesion can begin with repeat imaging with MRI following completion of radiation and chemotherapy.

Conclusion:

Ruling out malignancy with thorough clinical workup is necessary in patients presenting with focal neurologic deficits.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Hussam Mahmood, DO

TITLE:

Iatrogenic hemidiaphragm paralysis following thoracotomy in a patient with arteria lusoria:
A case report

ABSTRACT:

Aneurysms of the aortic arch branches are rare disorders. Their presentation is often asymptomatic and can go undetected. Furthermore, the proximal to mid subclavian and brachiocephalic arteries are difficult to examine directly given their depth within the chest. Aberrant subclavian artery (aSCA) or arteria lusoria is an aortic arch anomaly with many variations.

Our patient was previously presented with chronic dysphagia and non-productive cough at the age of 54. CT angiography at the time determined right aSCA with aneurysmal dilation compressing the trachea and esophagus, aneurysmal dilation of both subclavian arteries at the diverticulum of Kommerell, and a common origin of carotid arteries known as truncus bicorticus. (Abdelsalam et al. 2014) A successful hybrid endovascular-surgical approach was undertaken.

The patient, now 64-year-old female, presents to pulmonary clinic with worsening exertional dyspnea following thoracotomy, lysis of adhesions, and surgical left atrial appendage ligation. The patient was deemed a fall-risk while on long term anticoagulation for her atrial fibrillation. She was experiencing chronic dizziness from her long-standing subclavian steal syndrome secondary to her bilateral subclavian resection and bypass. The concern for long-term anticoagulation led her to be evaluated for a watchman, which she was poor candidate given her abnormal vasculature, instead opting for surgical left atrial appendage ligation.

Post-operatively, the patient experienced trepopnea, worse when laying in left lateral position. Repeat spirometry showed a pattern of severe restriction, a stark contrast to the moderate obstructive pattern seen prior. Supine spirometry showed decrease in FVC by 25%. Sniff test confirmed left hemidiaphragm paralysis.

The patient likely had left phrenic nerve injury while she underwent thoracotomy with lysis of adhesion and left atrial appendage ligation. Unfortunately, her rare anatomy and the efforts to decrease her risk of stroke resulted in a suboptimal outcome.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Connor Murphy, DO

TITLE:

An Interesting Case of E. Coli Pleural Effusion

ABSTRACT:

The purpose of this case is to highlight a rare microbial finding in pleural fluid analysis caused by E.coli, and to discuss the etiology, presentation, work up, and management of this finding.

The patient is an 83 year old female with a history of persistent atrial fibrillation, chronic diastolic congestive heart failure, chronic deep vein thrombosis of bilateral lower extremities, and diverticulosis who presented to the emergency department for evaluation of nausea, left sided lateral chest wall pain, and left upper quadrant abdominal pain. This pain was described as a sharp, stabbing, progressively worsening pain which was rated a 6/10 (with 10 being the worst pain imaginable). She further complained of dry heaving and mild shortness of breath.

On admission, cardiac, abdominal, and infectious work ups were completed. Chest X-Ray was significant for bilateral pleural effusions and electrocardiogram showed chronic, unchanged persistent atrial fibrillation. CT scan of the abdomen/pelvis showed gallstones, which was confirmed on ultrasound. The patient was positive for Systemic Inflammatory Response Syndrome (SIRS) with a leukocytosis of 27.3 K/uL. Urinalysis was significant for urinary tract infection, which resolved after a few days of antibiotics. HIDA scan was negative for cholecystitis. With worsening shortness of breath, repeat Chest CT was performed and showed large right sided pleural effusion and right upper lobe tree-in-bud opacities. Persistent leukocytosis narrowed focus to infectious source, specifically pleural effusion. The patient was treated with antibiotic therapy, supportive care, and multiple administrations of Tissue Plasma Activator (tPa)/Dornase via a right chest tube with continued drainage of pleural fluid. The patient's symptomatology did not improve despite appropriate therapies administered.

In conclusion, E. coli positive pleural fluid is a rare finding of pleural effusion that can present with as nonspecific chest/abdominal discomfort. Despite appropriate cardiac, abdominal, and infectious work up, patient's symptoms did not improve.



Poster Presentations

Surgical Track

Medical Education Day 2022

Surgical Track - Poster

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1	CASE	Kelly Fening, DO; Troy Moritz, DO	Endobronchial Dieulafoy Lesion: A Rare Presentation Of Hemoptysis
2	CASE	Sheina Bawa, MD; Vanessa Hortian, DO; Nathaniel Melton, MD	Massive Spontaneous Pneumopericardium with No Obvious Etiology
3	CASE	Caroline Lippe, DO	Milk Rejection Sign in Breast Cancer Patients: A Forgotten Phenomenon?
4	CASE	Dawn Cox, DO; Fielding Richards, DO	Case Report: Cecal Bascule
5	CASE	Swhaeb Shubair, MD	From Throwing Baseballs to Throwing.. Clots!
6	CASE	Jeffrey Chapek, DO	Case Presentation: Symptomatic Scapular Nonunion Treated with ORIF Using Dual-Plate Construct
7	CASE	William Baumgartner, DO; Stephen Atkinson, DO; Matthew Robinson, DO	Strangulation Of Small Intestines Causes By Paracecal Hernia Due To Congenital Anomaly
8	RESEARCH	Kevin Taylor Spence, MD; Chance Benner, DO	Unit Cost Optimization of Hernia Mesh at UPMC Central PA
9	RESEARCH	Bailey Lien, MD; Vanessa Hortian, DO, MS, LAc; Yi Wang, MD, PhD; Danielle Ladie, MD	Pre-surgical Optimization for High-Risk Patients: Follow-Up Study Addressing Readmission for Optimized Patients
10	RESEARCH	Charlie Yoo, DO; Anthony Kamson, DO; Alexander Yevtukh, DO; Daniel Kim, DO	Robotic Assisted Total Knee Arthroplasty Leads To Early Improved Range Of Motion Compared To Conventional Jig-Based Total Knee Arthroplasty
11	RESEARCH	Maria Ahmad, DO	Pre-Surgical Optimization for High Risk Patients: Clinical Outcomes and Cost of Care Across Surgical Service Lines in a Five-Year Cohort
12	TOPIC	Yi Wang, MD PhD	Topic Discussion: The Treatment Of Sternoclavicular Joint Infection
13	TOPIC	Sibo Sun, DO	Current Recommendations in the Treatment of Vertebral Fragility Fractures
14	TOPIC	Joshua D. Harman, DO; Christopher K. Folau, DO	Topic Discussion of the Displaced Type 5 Ideberg Scapular Fractures – Diagnosis and Treatment
15	CASE	Breanna Davis, DO	Split Flexor Digitorum Superficialis Tendon Transfer for Isolated Intrinsic Dysfunction of the Index and Long Fingers: A Case Study and Literature Review

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Kelly Fening, DO; Troy Moritz, DO

TITLE:

Endobronchial Dieulafoy lesion: a rare presentation of hemoptysis

ABSTRACT:

A Dieulafoy lesion is defined as the presence of large and dysplastic arteries in the submucosa. This disease is most commonly encountered in the gastrointestinal tract but rarely may be seen in the bronchus and is associated with massive hemoptysis. This case report describes the presentation, diagnosis, treatment, and follow up of a patient who presented with hemoptysis and was found to have an endobronchial Dieulafoy's lesion.

A 60-year-old female with a remote history of smoking presented with a one-day history of hemoptysis. She denied use of anticoagulants, NSAIDs, or herbal products that would predispose her to hemoptysis. Her family history was significant for lung cancer in both her mother and father. She was hemodynamically stable on admission. Chest CT revealed fairly extensive debris within the right lower lobe bronchus and bronchioles, nonspecific ground-glass attenuation opacities throughout both lungs, and mild hyperinflation of the right lower lobe. She underwent bronchoscopy at which time an actively bleeding endobronchial vessel was visualized. Balloon tamponade of her right lower lobe and bronchus intermedius was performed with subsequent IR embolization of the right bronchial artery. She was transferred to the ICU post-operatively. She was successfully extubated on post-operative day 1 and was discharged on post-operative day 5.

She followed up in the outpatient office one week after hospital discharge at which time she reported no further episodes of hemoptysis. A repeat chest CT was obtained that revealed resolution of the ground-glass opacities in the right lung as well as clearing of the previously seen filling defects in the right mainstem bronchus, bronchus intermedius and lower lobe segmental bronchi which was probably due to hemorrhage. No further follow up was required after her three month follow up visit given the patient's clinical improvement and her CT scan showed significant improvement of her previous conditions.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Sheina Bawa, MD

TITLE:

Massive Spontaneous Pneumopericardium with No Obvious Etiology

ABSTRACT

Purpose:

The purpose of this case report is to present a unique case of spontaneous pneumopericardium in a patient with no identifiable source and to discuss possible etiologies that may be considered in our patients presentation.

Background/case:

Our case presents an 88 year old male who presented to UPMC Pinnacle Harrisburg via EMS with a chief complaint of chest pain, syncope, bradycardia, and hypotension. Upon his initial presentation to the emergency department the patient appeared diaphoretic, fatigued, and with chest pain radiating down his arm that had been worsening over the last couple of hours. A CT angiogram of the chest performed in the emergency department revealed a large volume pneumopericardium, and a small amount of pneumomediastinum. Emergent operative intervention included a subxiphoid pericardial window and placement of a pericardial thoracotomy tube.

Summary/Conclusion:

Despite multiple diagnostic modalities undertaken in the operating room including EGD and fluoroscopy with dye there was no identifiable source found that could have led to our patients large amount of pneumopericardium this case is unique in this respect. We present here a review of the literature of spontaneous pneumopericardium and suspected etiologies in our patient despite a negative intraoperative diagnostic workup.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Caroline Lippe, DO

TITLE:

Milk Rejection Sign in Breast Cancer Patients: A Forgotten Phenomenon?

ABSTRACT

Introduction:

Pregnancy associated breast cancer (PABC) is becoming increasingly more common due to changes in society as women delay having children to later in life. The difficulty of diagnosing PABC is a result of the changes of the breast within pregnancy and in lactation, altering the structure of the breast and making standard imaging less effective. Our study looks at three postpartum mothers with recent diagnosis of breast cancer, all lactating, that show the milk rejection sign from their babies leading them to seek medical advice.

Case Presentation: 3 postpartum mothers with new diagnoses of breast cancer in the postpartum period were investigated for this case study. 2 of the 3 mothers noted preferential breast feeding of the newborn on the contralateral side of positive breast cancer. The other mother did not breastfeed, but rather pumped during the postpartum period. Breast cancer diagnoses of all three patients were invasive ductal cancer, with only one patient having additional high grade DCIS microinvasion on pathology. Patients were all treated with surgical excision.

Discussion:

When diagnosed with PABC, cancer is noted to be more aggressive and in more advanced stages compared to nonpregnant females. Our case study had 3 postpartum mothers with confirmed invasive carcinoma requiring subsequent excision and chemoradiation in some cases. The use of different diagnostic modalities like ultrasound, MRI and mammogram are still being discussed when it comes to diagnosing PABC. There is no definite treatment algorithm to properly diagnose PABC at this time.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Dawn Cox, DO; Fielding Richards, DO

TITLE:

Case Report: Cecal Bascule

Cecal volvulus is a rare clinical diagnosis with an average incidence of 2.8 - 7.1 per million people per year. Cecal bascule is the least common type of cecal volvulus, seen in only about 20% of cases. It occurs when a redundant cecum folds onto itself and the proximal ascending colon in the sagittal plane. There is no twisting component, like that which is seen with the more common types of cecal volvulus. Non-operative reduction of a cecal bascule is rarely successful and therefore early surgical intervention is indicated. Surgical approaches include an ileocecectomy or right hemicolectomy.

This is a case report about an 85-year-old male who presented to the emergency department with acute onset, sharp, stabbing right upper quadrant pain and CT findings concerning for a cecal volvulus. He was emergently taken to the operating room for an exploratory laparotomy where a cecal bascule was found. He ultimately underwent a right hemicolectomy with side-to-side anastomosis. The goal of this report is to emphasize the importance of early diagnosis and surgical management of a cecal bascule, in order to reduce the risk of further complications and mortality. Although rare, cecal volvulus and cecal bascule should be included in the differential diagnosis for anyone presenting with acute abdominal pain and obstructive symptoms.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Swhaeb Shubair, MD

TITLE:

From Throwing Baseballs to Throwing.. Clots!

Background:

Primary spontaneous upper extremity deep vein thrombosis, also known as Paget-Schroetter syndrome, is a rare disease defined as thrombosis of the deep veins of the upper extremities. It has an estimated incidence of 1-2 per 100,000 population. It is seen in relatively young and healthy children and adolescents, with a predilection for males. In the 1960's, the term "effort induced thrombosis" was coined as it has been reported to occur after repeated vigorous activity. I hereby present a case of Paget-Schroetter syndrome in a young college baseball player.

Case Report:

A healthy 20-year-old male baseball player presented with acute onset of right upper extremity pain and swelling, which progressed from two weeks of discomfort. A venous ultrasound of that extremity showed venous thrombosis involving the right axillary vein, brachial veins, and basilic vein with thrombus extension into the inferior aspect of the subclavian vein. Patient was started on intravenous heparin and taken to the operating room for a thrombectomy followed by direct catheter lysis with tissue plasminogen activator. The patient was subsequently discharged safely the next day on oral anticoagulation and appropriate follow up.

Conclusion:

In conclusion, Paget-Shroetter syndrome is a rare condition that should be included on the differential in relatively young patients who present with pain and swelling of the upper extremities. This condition can be diagnosed on venous duplex ultrasound. With early recognition and appropriate treatment, morbidity and mortality are overall low and patients typically make a full recovery.

Keywords: Paget-Shroetter, Thrombosis, Upper Extremity

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Jeffrey Chapek, DO

TITLE:

Case Presentation: Symptomatic Scapular Nonunion Treated with ORIF Using Dual-Plate Construct

ABSTRACT

Case:

A 64-year-old male sustained a MVC in which his primary injury complex was a comminuted fracture of his right scapular body. Due to the lack of glenoid or scapular neck involvement this injury was initially deemed nonoperative. This treatment course continued for nearly 3 years until, due to pain and shoulder dysfunction, the patient finally sought medical attention for his shoulder. A CT scan was obtained as part of his workup which showed an atrophic scapular nonunion. The patient was subsequently sent to a shoulder and elbow specialist where the decision was made to proceed with surgical debridement of the nonunion followed by open reduction internal fixation. Patient recovered well postoperatively and was promptly discharged from the hospital, initially NWB in a sling.

Summary:

Scapular fractures are relatively uncommon and generally represent 0.5–1% of all fractures. The majority (90%) of scapular fractures are deemed nonoperative due to the inherent stability of the scapula provided by its host of muscular attachments. In the rare case surgical indications are met, it is often due to significant angulation/displacement of the scapular neck or glenoid, which represents the primary joint component of the scapula. In an uncompromised host it is rare to have a case of scapular nonunion. This case report will add value to the current body of literature as it will shed light on a rare sequela of nonoperatively managed scapular fractures. It will also be valuable in describing the treatment modality employed as part of its surgical correction.

Conclusion:

Nonunion is a rare and debilitating complication of scapular body fractures. We demonstrate a unique and complex case of non-union debridement, followed by open reduction and internal fixation, with satisfying results.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

William Baumgartner, DO; Stephen Atkinson, DO; Matthew Robinson, DO

TITLE:

Strangulation of Small Intestines Causes By Paracecal Hernia Due to Congenital Anomaly

ABSTRACT:

Paracecal hernia is a rare type of internal hernia that can present as a small bowel obstruction. Risk factors that can cause a paracecal hernia may be related to congenital anatomic anomalies, defects in the paracecal area related to surgery or trauma, adhesions, or increased intra-abdominal pressure.

This case is of an 84 year old male who reported to the emergency room with right lower quadrant abdominal pain, nausea, vomiting, and three-day history of diaphoresis. No significant abdominal surgery was reported besides a recent left open nephrectomy nine months prior. The CT scan showed dilated small bowel loops lateral to a medially displaced cecum. Laparoscopy was performed followed by conversion to open. Proximal ileum appeared to be herniating from inferior to superior along the white line of Toldt adjacent to the cecum, creating an internal hernia defect between the posterior aspect of the cecum and the anterior aspect of the retroperitoneum. Approximately 10 inches of ischemic bowel was reduced from the defect and was resected due to nonviability. The defect was closed. A very redundant right colon and lax white line of Toldt was observed. The internal hernia defect appeared to be created by congenital attachment to pelvic brim, creating internal hernia defect posterior to the cecum and hernia sac that ran posterior and lateral to the cecum through the white line of Toldt. According to Meyer's classification, this could be classified as a lateral paracecal hernia. The patient's post-operative course was uncomplicated. He was discharged on post operative day six.

Although encountered infrequently, paracecal hernia should be considered in a surgeon's differential diagnosis, as there is a high likelihood of bowel ischemia. Delay in treatment can lead to increased morbidity; therefore, timely diagnosis is of utmost importance.



LIFE CHANGING MEDICINE

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Kevin Taylor Spence, MD; Chance Benner, DO

TITLE:

Unit Cost Optimization of Hernia Mesh at UPMC Central PA

ABSTRACT:

Hernia mesh typology, product selection and their various performances has been an important topic of discussion in recent literature. The chosen parameters to evaluate mesh performance is commonly measured by recurrence rates, infection, cost to both the patient and institution, hospital readmission rates, and complications related to the mesh. The cost of individual mesh product varies from hundreds of dollars to thousands of dollars. The rationale for use of more expensive mesh is justified by claims of superior performance in certain clinical scenarios relative to conventional mesh products. However, sufficient data has now been collected to measure the actual clinical performance of these new mesh products. Many studies have demonstrated not only equivocal, but inferior performance by several new products in various categories. We hypothesize similar findings when looking at our own hernia mesh repair data. Specifically, we expect permanent, macroporous mesh will outperform its counterparts when evaluating our patient population. The metrics for performance will be: Infection, recurrence, readmission rates, any complications related to the mesh, as well as the cost of mesh plus the cost of managing their associated complications. Data will be collected using CPT codes designated for hernia repair with mesh over the last 10 years at UPMC of Central PA. Using multivariate analysis of variance testing of the data, results will be used to determine and isolate the performance metrics of each mesh product. This information will enable value driven approach to hernia management within our system, with better outcomes at lower costs. This knowledge will further facilitate patient and provider communication for more informed decisions.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Bailey Lien, MD; Vanessa Hortian, DO, MS, LAc; Yi Wang, MD, PhD; Danielle Ladie, MD

TITLE:

Pre-surgical Optimization for High-Risk Patients: Follow-Up Study Addressing Readmission for Optimized Patients

ABSTRACT:

Within the UPMC Central Pennsylvania Health System, visiting the Surgery Optimization Clinic (SOC) has been shown to decrease length of hospital stay and reduce rate of postoperative complications; however, there is no significant difference in 7- and 30-day readmission rates.¹ The SOC offers a one-time, 60-minute ambulatory visit with a designated nurse practitioner to identify modifiable risk factors and incorporate adjunct lifestyle changes to patients' primary care prior to operative management. Through a single institution, retrospective cohort study, we examined the surgical outcomes of patients diagnosed with diabetes, tobacco dependence, or BMI >35 who visited the SOC compared to patients with the same diagnoses who did not visit the SOC. We expanded from the previous studies that used 1- and 3-year data to include patients from 8/1/2016-9/30/2021. This project specifically examines the patients' readmission diagnoses and whether there is a difference in readmission rates stratified by age, sex, comorbid condition(s), surgical service, surgical intervention, and discharge location. From preliminary data, we found that there is no significant difference in readmission rates for SOC patients compared to control patients when stratified for age, sex, or discharge location. We hope to identify major reasons for readmission and/or a significant difference in readmission rates within stratified groups to determine new interventions that could be offered through the SOC. The goal of this study is to reduce 7- and 30- day readmission to improve patient outcomes and lower healthcare-related costs.

1. Vanessa A. Hortian, DO, MS, LAc, Yi Wang, MD, PhD. Pre-Surgical Optimization for High Risk Patients: Follow-Up Study Reflecting the Impact on Clinical Outcomes and the Cost of Care in a Three-Year Cohort. Poster presented at: UPMC Harrisburg Medical Education Day; 2021 April 8; Harrisburg, PA

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Charlie Yoo, DO; Anthony Kamson, DO; Alexander Yevtukh, DO; Daniel Kim, DO

TITLE:

Robotic assisted total knee arthroplasty leads to early improved range of motion compared to conventional jig-based total knee arthroplasty

ABSTRACT

Hypothesis:

We hypothesize robotic assisted total knee arthroplasty will achieve maximum knee flexion earlier than conventional jig-based total knee arthroplasty.

Overview:

Current data suggests there is an early improved recovery of patients undergoing robotic-assisted total knee arthroplasty. This retrospective review study of post-operative range of motion comparing robotic assisted total knee arthroplasty vs conventional jig-based total knee arthroplasty will help elucidate if there are any benefits in post-operative range of motion. We will evaluate if there is any differences in early improved range of motion between robotic assisted total knee arthroplasty vs conventional jig-based total knee arthroplasty.

Design/Materials/Methods:

Retrospective case control study of post-operative robotic assisted total knee arthroplasty patients from Jan 1st 2015 to Jan 1st 2021 at UPMC Pinnacle. We will be primarily using study materials from patient charts and physical therapy notes. Inclusion criteria will be primary total knee replacements performed by orthopedic surgeon utilizing robotic assisted total knee arthroplasty or manual jig-based total knee arthroplasty who utilized outpatient physical therapy pre- and post-operatively. Exclusion criteria will include post-operative complications, underlying neurological dysfunction compromising mobility, disposition to rehab, revision total knee arthroplasty. Primary outcomes measured will be post-operative knee range of motion assessed by physical therapy. We will assess how many physical therapy sessions were performed, maximum knee range of motion, average time to achieve goal range of motion, pain during physical therapy sessions, and knee outcome survey. Additionally, secondary outcome measures including patient demographics, medical comorbidity, length of stay, number of inpatient physical therapy sessions.

Results/Conclusion:

We predict our results will demonstrate patients who underwent robotic assisted total knee arthroplasty will achieve maximum knee flexion earlier than patients who underwent conventional jig-based total knee arthroplasty.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Maria Ahmad, DO

TITLE:

Pre-Surgical Optimization for High Risk Patients: Clinical Outcomes and Cost of Care Across Surgical Service Lines in a Five-Year Cohort

ABSTRACT

Overview:

UPMC Harrisburg established the Surgery Optimization Clinic (SOC) in 2016 with the purpose of coordinating care with surgeons, primary care physicians and consulted providers to optimize patients' modifiable risk factors prior to surgery. Among the risk factors addressed are smoking, obesity and uncontrolled diabetes. Patients undergo a comprehensive one-hour provider appointment with continued support to comply with optimization plan.

Objective/Hypothesis/Expected Results:

Prior studies on this SOC patient population revealed that optimized surgical patients had a shorter length of stay (LOS) and less post-operative complications but individual surgical service line data was not explicitly studied. This retrospective analysis aims to evaluate five years of data to compare clinical outcomes such as LOS, overall cost of care and readmission rates in patients undergoing an elective procedure when compared to non-optimized patients across various surgical service lines. We hypothesize that LOS, cost of care and readmission rates will be lower across all surgical service lines in the SOC-optimized patients.

Design/Methods:

Target population: single institution, retrospective cohort study = P3 (Harrisburg, CGOH, WSH, Carlisle): data collected over five years from Crimson Database (08/01/2016 – 10/01/2021)

Case selection criteria: Age 18+, scheduled surgery, severity level = minor, moderate or major, mortality risk = minor, moderate or major

Comparison groups: SOC patients, control group; scheduled surgery patients with diagnosis of diabetes, tobacco dependence, or BMI >35

Exclusion criteria: Planned readmissions based on physician documentation, mechanical complications or pain of a device, post-surgical hypothyroidism in general surgery patients, hardware malfunction/pain in orthopedic surgery patients

Main Outcomes and measures: Demographic differences, LOS, same-day surgery cancellation rates, 7 and 30-day readmission Rates, post-operative complications, mortality

Statistical Analysis

- Chi-squared test will detect significant difference between groups in categorical variables.
- T-test will detect significant difference between groups in continuous variables.
- P-value<0.05 will be considered statistically significant.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Yi Wang, MD, PhD

TITLE:

Topic discussion: The treatment of sternoclavicular joint infection

Sternoclavicular joint (SCJ) infections are an uncommon clinical condition accounting for less than 1% of all joint infections. Fewer than 250 cases were reported in the past 50 years, although incidence has been increasing. Due to the rarity of the disease, the literature on this topic comes mostly from case series and thus, management of SCJ infection remains challenging. Here, we performed a systematic review of the literature on SCJ infections with available data from 2018-2021.

PubMed online database was used for literature search. A total of 19 case reports and 8 case series were identified. Patient demographics, risk factors, symptoms, and surgical or non-surgical treatment were reviewed in this study. We reviewed 225 cases of SCJ infection reported between 2018-2021. The mean age was 54.7; males 140 (62%). The most common etiologies included IVDA, bacteremia, diabetes, and septic arthritis at a distant site. Other etiologies included indwelling catheter, tuberculosis, metastatic cancer, gout, trauma, and immunosuppression. There were 8 cases without identified etiology. All cases reported to have either pain, swelling, or erythema as initial symptoms. Staphylococcus aureus was isolated in over 50% of the reported cases, while Streptococcus, Mycobacterium intracellulare, Clostridium perfringens, E. coli, Pseudomonas, and Tuberculosis were found in others. All patients were treated with long term intravenous antibiotics ranging from 4 weeks to 2 months. 65% of patients received surgical treatment ranging from aspiration, incision and drainage, debridement, and SCJ resection. Wound closure following debridement or joint resection included primary closure, delayed closure, negative pressure wound VAC therapy and muscle advancement flap.

In summary, SCJ infection incidence is increasing, in part, due to IVDA. Prompt and accurate diagnosis are imperative. Early surgical intervention in severe SCJ infection is critical to improve outcomes. Wound VAC therapy is a critical tool in secondary wound closure.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Sibo Sun, DO

TITLE:

Current Recommendations in the Treatment of Vertebral Fragility Fractures

ABSTRACT:

The purpose of this discussion is to examine the latest recommendations for the treatment of vertebral fragility fractures and preoperative optimization for spine surgery in the osteoporotic patient. A review of the literature will be conducted and current recommendations will be discussed.

Background:

Osteoporotic vertebral compression fractures are the most common fragility fracture. The osteoporotic patient is also at an increased risk for neurologic deficits and instability with higher energy traumatic injuries seen with thoracolumbar burst fractures. These fractures have significant morbidity and cost burden associated with them. With the growing size of the elderly population, the prompt evaluation and treatment of these fractures will play a progressively larger role in the Orthopaedic surgeon's practice.

Summary:

Recent evidence suggests that surgical intervention for acute vertebral fragility fractures have positive outcomes on pain, functional outcome, and quality of life when compared to conservative management. Percutaneous balloon kyphoplasty has also shown better outcomes and lower complication rates when compared to vertebroplasty. The need for surgical intervention in the presence of neurologic deficits should carefully be considered within the context of fracture characteristics and stability as determined by the Thoracolumbar Injury Classification and Severity Score (TLICS). Additionally, perioperative optimization of the osteoporotic patient with a particular focus on nutritional status can have a profound impact on the long term outcomes and prevention of future fragility fractures.

Conclusion:

Vertebral fragility fractures can have a significant impact on functional status and quality of life. It is essential to have a strong understanding of the current evidence based recommendations regarding the evaluation and management of these fractures to improve patient outcomes.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Joshua D. Harman, DO; Christopher K. Folau, DO

TITLE:

Topic Discussion of the Displaced Type 5 Ideberg Scapular Fractures – Diagnosis and Treatment

ABSTRACT:

The purpose of this Topic Discussion is to discuss a rarely seen injury in order to educate those involved in these individuals care. Scapula fractures are uncommon injuries. They are estimated to account for less than 1% of all skeletal injuries and between 3%-5% of fractures about the shoulder girdle (Rockwood, 2006 OTA Zlowdowski.) They most commonly occur in adult males and typically result from high-energy mechanisms such as motor vehicle accidents or falls from height (Rockwood, 2006 Zlowdoswski OTA.) Concomitant injuries are the rule, rather than exception, and include ipsilateral shoulder girdle and extremity fractures, thoracic cavity and organ injury, head injuries, spinal fractures, and more (Rockwood, Cole JAAOS, Baldwin 08, Tadros 07). The Ideberg classification system classifies the fracture morphology by inclusion of scapular body, scapular neck, and the glenoid. The displaced Ideberg V classification is one of a few types of scapular fractures which requires fixation in order to achieve optimal functional outcomes. These are rare injuries and discussions of open reduction and internal fixation techniques are of the utmost importance to the trauma teams caring for these patients and injuries.

MEDICAL EDUCATION DAY – APRIL 20, 2022

AUTHOR(S):

Breanna Davis, DO

TITLE:

Split Flexor Digitorum Superficialis Tendon Transfer for Isolated Intrinsic Dysfunction of the Index and Long Fingers: Case Study and Literature Review

ABSTRACT

Purpose:

To describe a rare clinical presentation of isolated intrinsic dysfunction of the index and long fingers and to detail a unique tendon transfer reconstruction.

Case Description:

72-year-old right hand dominant female with a past surgical history of an anterior cervical discectomy and fusion and left carpal tunnel release (CTR) presented with left hand motor dysfunction. Electromyographic testing demonstrated acute on chronic left brachial plexopathy. She underwent a revision left CTR with neurolysis of the median and ulnar nerves. She had symptom relief for one year but developed a contracture of her left index digit. She underwent a left index finger extensor tendon transfer and left index contracture release of the metacarpal phalangeal (MCP) and proximal interphalangeal (PIP) joints. Her hand function improved, however she complained of weakness in abduction and extension of the left index and long fingers. We then performed a split tendon transfer of the long finger flexor digitorum superficialis to the radial lateral band of the long and index fingers. Additionally, we imbricated the volar capsule of the long and index digits to prevent a PIP joint hyperextension deformity. The patient has regained full function and dexterity of her left hand.

Summary:

There are two documented cases describing a split FDS tendon transfer to the radial lateral band. These cases highlight the utility of this transfer in a traumatic setting and transfer the split tendon to only one digit. Our case is unique in that the patient did not have previous trauma to the hand and the FDS was transferred to two digits rather than one.

Conclusion:

Patients with intrinsic index and long finger dysfunction who have failed extensor tendon transfer for intrinsic reconstruction may benefit from a split flexor digitorum superficialis tendon transfer to the lateral bands.