SMA's 2022 Annual Scientific Assembly Abstract Presentations

The following abstracts were accepted and presented during Southern Medical Association's 114th Annual Scientific Assembly, October 28-30, 2022, and are listed in the original order of presentation. Abstracts are published as submitted.

Session 4B - Bioethics & Medical Education; Emergency & Disaster Medicine; and Medicine & Medical Specialties

The Impact of COVID on Medical Education: Evaluation of Immunology Module Performance and Student Satisfaction in In-Person vs Virtual Course Presentation

Category: Bioethics & Medical Education / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Background: In March of 2020, education across the world transitioned to virtual delivery and medical education was not immune. The quality of online education at all levels of learning has been questioned by parents, students, and instructors alike, however comparisons of student performance between in-person and virtual delivery of the same medical course have not been fully investigated.

Purpose: This research aimed to explore the efficacy of virtual medical education during the COVID-19 pandemic by comparing the 2019 and 2020 Immunology course offered at the University of South Carolina School of Medicine Greenville.

Methods: The project compared course material provided between the two years, as well as compared overall course performance and performance by objective as outlined in course presentations. De-identified student data from 61 final exam questions that did not differ between the two years will be analyzed to assess student performance in the course by topic, delivery method and resources. Prism GraphPad 9 will be used for statistical analysis.

Results: In addition to changes in content delivery, formative Canvas quizzes were generated in 2020 to replace lecture review questions and the total number of Clinical cases decreased. The student performance results have not been processed in their entirety.

Conclusions: Once results have been obtained, the hope is to draw conclusions on whether virtual education during the COVID-19 pandemic affected final Immunology exam outcomes and identify successful strategies for student learning. Overall, this study may have implications for students educated during COVID and for medical education as a whole.

Learning Objectives:

- Identify some of the changes in medical education delivery that COVID made necessary
- Discuss how student satisfaction surrounding undergraduate immunology medical education changed from 2019 (before COVID) to 2020 (during COVID)
- Discuss how content delivery changes during COVID affected immunology course performance compared to pre-COVID performance

References:

1. Prescott, John E. Important Guidance for Medical Students on Clinical Rotations During the Coronavirus (COVID-19) Outbreak. 2020 March. https://www.aamc.org/news-insights/press-releases/important-guidance-medical-students-clinical-rotations-during-coronavirus-covid-19-outbreak
2. Sadeghi R, Sedaghat MM, Sha Ahmadi F. Comparison of the effect of lecture and blended teaching methods on students' learning and satisfaction. J Adv Med Educ Prof. 2014 Oct;2(4):146-50. PMID: 25512938; PMCID: PMC4235559.
3. Motte-Signoret E, Labbé A, Benoist G, Linglart A, Gajdos V, Lapillonne A. Perception of medical education by learners and teachers during the COVID-19 pandemic: a cross-sectional survey of online teaching. Med Educ Online. 2021 Dec;26(1):1919042. doi: 10.1080/10872981.2021.1919042. PMID: 33871308; PMCID: PMC8079026.
4. AlQhtani A, AlSwedan N, Almulhim A, Aladwan R, Alessa Y, AlQhtani K, Albogami M, Altwairqi K, Alotaibi F, AlHadlaq A, Aldhafian O. Online versus classroom teaching for medical students during COVID-19: measuring effectiveness and satisfaction. BMC Med Educ. 2021 Aug 28;21(1):452. doi: 10.1186/s12909-021-02888-1. PMID: 34454493; PMCID: PMC8397601.

Tacrolimus-Induced Pericardial Effusion

Category: Bioethics & Medical Education / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Tacrolimus, calcineurin inhibitor, is an immunosuppressive therapy for transplant rejection prophylaxis. It has effects such as nephrotoxicity, neurotoxicity, infection, ascites and pleural effusions. However, pericardial effusion is an effect rarely seen. We present a case of a patient with recurrent pericardial effusion associated with chronic treatment with tacrolimus.

A 75-year-old Jamaican male presented to the hospital with a large pericardial effusion, ejection fraction of 56-60%, and moderate pulmonary hypertension on echocardiogram. His medical history involved renal transplant (from daughter) in 2002 and on tacrolimus, mycophenolate mofetil, and prednisone. The patient was prescribed tacrolimus to take 0.5 mg daily, but took 1.5 mg in morning and 2mg in evening. Patient was COVID negative. He had emergent pericardiocentesis (750 cc of serosanguinous fluid), followed by a pericardial sub-xyphoid window and drain placement, removed a few days later. Fluid analysis (AFB stain, Gram stain, with fungal, viral, and tissue

culture) was negative. Pericardial biopsy showed benign fibroadipose tissue consistent with pericardium. Cytology showed normal mesothelial cells and no malignant cells. The consulted nephrologist reduced frequency of the tacrolimus from 0.5 mg twice daily to once daily. The patient was discharged, but re-admitted about 3 months later with fatigue, anorexia, poor oral intake, abdominal distention, and bilateral peripheral edema. CT abdomen and pelvis showed anasarca with moderate ascites. A follow up echo showed normal EF 56-60% and a moderate to large pericardial effusion anterior to heart with concerns for cardiac tamponade. The tacrolimus was discontinued for a couple days which improved creatinine from 1.55 to 1.32 with baseline 1.3-1.4. However, tacrolimus was restarted, which increased creatinine to 1.59 over couple days. He underwent a right thoracoscopy and Video-Assisted Thoracoscopic Surgery with pericardial window, which recovered serous fluid. Repeat fluid analysis, biopsy, and cytology were unchanged. His post-thoracoscopy chest tube was later removed. Rheumatology followed. He had negative ANA comprehensive panel (SCL-70, SM Ab, SM/RNP), CRP, ESR, Rheumatoid Factor, anti-CCP Ab IgG, and CK. He subjectively improved and was later discharged.

The final diagnosis was Tacrolimus-induced pericardial effusion with reduced dose Tacrolimus to 0.5mg and follow up with Nephrology and Cardiology.

Learning Objectives:

- Describe an approach towards identifying cause of pericardial effusion to rule out all possible reasons in setting of Tacrolimus taken for organ transplant prophylaxis

Leriche Syndrome: An Unusual Left Lower Extremity Pain

Category: Emergency & Disaster Medicine / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

Presenting Author: Shanesse Spratt, MD, Emergency Medicine Resident, PGY1, Department of Emergency Medicine, MRHC, Corinth, MS

Introduction: 79 yo WF presents to the ED with LLE pain.

Case Presentation: 79 yo WF with PMH of HTN, HLD, CAD, PAD, tobacco abuse, RLE BKA, femoropopliteal bypass in 1989 presented to the ED with severe LLE pain that awoke her from her sleep. On physical examination the patient is extremely petite, with tenderness to palpitation of the LLE and the LLE is cold to touch. No palpable pulses. Differential diagnoses include occlusion of LLE DVT, acute arterial occlusion, compartment syndrome and phlegmasia alba dolens. LLE CTA obtained revealed high grades stenosis of abdominal aorta secondary to hyperdense thrombus approximately 80-90% which occludes the bilateral limbs of the aortoiliac bypass graft with chronic occlusion of the native common, external, and internal iliac arteries. Occlusion of right femoropopliteal bypass graft as well as the native SFA and popliteal artery without evidence of reconstitution of flow distally. Occlusion of left common femoral artery and proximal SFA. Proximal left posterior tibial artery occlusion. Cardiology was consulted with recommendations of initiating heparin drip. Consulted CV surgery and they felt as if there was no intervention to offer patient due to severity of disease. Patient offered transfer to another facility for a second opinion. Patient declined. Patient admitted to ICU.

Diagnosis: Leriche Syndrome/Critical Ischemia of LLE

Management: General surgery was consulted and a LLE AKA was performed. Patient tolerated the procedure well and was discharged to SNF for rehab.

Learning Objectives:

- Effectively discuss alternative differential diagnoses when patients presents with lower extremity pain.

References:
1. Approach to revascularization for claudication due to peripheral artery disease Authors: Mark G Davies, MD, PhD, MBA, FACS, FACC, Hasan H Dosluoglu, MD, FACS Section Editors:Joseph L Mills, Sr, MD, John F Eidt, MD Deputy Editor: Kathryn A Collins, MD, PhD, FACS
2. Furrer M, Schüler M, Leutenegger AF, Rüedi T. Akutes Leriche-Syndrom bei einer bisher gesunden Frau: die Differentialdiagnose zum embolischen Verschluss [Acute Leriche syndrome in a previously healthy woman: differential diagnosis of embolic occlusion]. Helv Chir Acta. 1994 Dec;60(6):887-91. German. PMID: 7876006.
3. Brown KN, Muco E, Gonzalez L. Leriche Syndrome. [Updated 2022 Feb 16]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK538248/
4. Adnor S, El Kourchi M, Wakrim S. When the aortoiliac bifucation is occluded:Leriche syndrome. Ann Med Surg (Lond). 2022 Feb 25;75:103413. doi: 10.1016/j.amsu.2022.103413. PMID: 35386798; PMCID: PMC8977906.

Facilitated Discovery of Pineal Mass by Lumbar Puncture

Category: Emergency & Disaster Medicine / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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A 43-year-old man with a 2-week history of headache and blurred vision presented to his ophthalmologist because of the latter complaint. He was noted to have unilateral papilledema and an MRI Brain revealed ventriculomegaly thought to be due to normal pressure hydrocephalus. A lumbar puncture (LP) was subsequently performed with an opening pressure of 20 cm H2O and 15 cc of CSF was removed. He developed a classic post-LP headache the next day that was successfully treated with a blood patch.

Several hours later, however, he began having a different headache from the post-LP one earlier in the day. His physical exam was normal and unchanged; including a neurological exam which revealed him to be alert and oriented X3, intact cranial nerves, normal gait and no motor/sensory deficits with normal reflexes. With a very recent MRI Brain, a CT Head was obtained and demonstrated a new 1.4 cm pineal mass that was not seen on the MRI.

This is an unusual presentation of a pineal mass that was not visible on imaging until an LP was performed giving definition to the mass.

Learning Objectives:
- List the differential diagnosis of unilateral papilledema.
- Appreciate the need for reimaging when patients' complaints change and are unexplained.

Four Ticks, Three Problems, Two Rare Diseases, One Night in a Rural ED

Category: Emergency & Disaster Medicine / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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An 82-year-old man presented to a rural emergency department with early acute respiratory distress syndrome requiring BiPAP and ICU admission. He was found to have intracellular bacteria on the blood smear in both neutrophils and monocytes while in the emergency department (see figure 1, next page). Later in the hospital stay he had confirmed Anaplasma and Ehrlichia co-infection with pathology and serology. Both of these bacteria are rare in the state of Mississippi (Incidence of Anaplasma and Ehrlichia 0.67 per million and 3.7 per million, respectively). On physical exam, the patient was found to have four ticks attached to him for an unknown length of time. Additionally the patient was found to have pancytopenia with urosepsis, believed to be secondary to the tick-born illnesses. Alone, these infections cause significant morbidity (hospitalization rates up to 50%) and mortality (0.5-3.0%). While there have been several case reports and textbook mentions of Anaplasma co-infections, these have been with Borrelia and Babesia… not Ehrlichia.

Learning Objectives:

- Note the differences in Anaplasma and Ehrlichia infections and presentations (including the spectrum).
- Reenforce that while the physical exam is often taken for granted, it certainly helped realize the underlying cause in this case.
- Realize that medicine truly is a “team sport” where everyone plays a role in helping patients, from EMS, nurses, doctors, lab techs, emergency department, ICU, wards, and follow-ups.

References:

1. Centers for Disease Control and Prevention. Anaplasmosis. https://www.cdc.gov/anaplasmosis/index.html. Last accessed 7-27-22.
2. Centers for Disease Control and Prevention. Ehrlichiosis. https://www.cdc.gov/ticks/tickbornediseases/ehrlichiosis.html. Last accessed 7-27-22.
3. Grant, L., Mohamedy, I., Loertscher, L. One Man, Three Tick-born illnesses. BMJ Case Rep. 2021, April16;14 (4):e241004.
4. Dumler, JS. Anaplasma and Ehrlichia Infection. Ann NY Acad Sci. 2005 Dec;1063:361-73.

A Giant Complication: A Case of Pituitary Apoplexy of a Giant Adenoma in a Patient on Anticoagulation Therapy

Category: Medicine & Medical Specialties / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: Pituitary adenomas represent 10 to 15% of intracranial tumors, and are classified according to their cell type, functionality, and size. Adenomas measuring >1 cm are classified as macroadenomas, and those measuring >4 cm are generally classified as giant adenomas. One rare, but potentially life-threatening complication of pituitary adenomas is pituitary apoplexy, which is a sudden hemorrhage into the pituitary gland. Risk factors include size of the adenoma, pregnancy, coagulopathy or anticoagulant use, and head trauma. Apoplexy usually presents with sudden onset severe headache and visual disturbances. All pituitary hormones may be lost, the most serious of them being ACTH and subsequent cortisol deficiency, which can cause sudden collapse, shock, and death.

Case presentation: An 80-year-old female with a past medical history of a nonfunctioning 4 cm pituitary macroadenoma and a recent DVT on anticoagulation with apixaban presented to the ER with acute onset nausea, vomiting, and a severe headache that started after a fall in which she hit her head. On initial presentation, she was alert and oriented, and no focal neurologic deficit was noted. Head CT and CTA demonstrated acute extensive subarachnoid hemorrhage surrounding and possibly involving the patient's known large suprasellar mass, which was later confirmed on MRI.

Final diagnosis: Pituitary apoplexy with extensive subarachnoid hemorrhage and panhypopituitarism

Outcome: The patient received prothrombin complex concentrate for reversal of apixaban, and was started on stress dose steroids for possible secondary adrenal insufficiency. She experienced a rapid deterioration of her neurologic function, and had to be emergently intubated. Repeat imaging showed interval worsening of subarachnoid hemorrhage and obstructive hydrocephalus, and the patient underwent emergent ventriculostomy with ventricular drain placement. Hormone replacement with levothyroxine was later added. The ventriculostomy drain remained in place, and drainage pressure was adjusted intermittently by neurosurgery. The patient remained comatose for 10 days after the procedure, and eventually died. The inciting factor was possibly the patient's head trauma, but concurrent anticoagulant use likely played a large role in the development as well as severity this patient's pituitary apoplexy. This highlights the importance of extensive counseling before initiation of anticoagulation in such patients.

Learning Objectives:

- Anticoagulation can significantly increase the risk of pituitary apoplexy, especially in patients with large macroadenomas, and patients should be extensively counseled on the risks and benefits before initiation of therapy.
- Pituitary apoplexy can cause rapid hemodynamic compromise due to ACTH and subsequent cortisol deficiency, necessitating early stress dose glucocorticoid administration.

Management of Hyperlipidemia Induced by Primary Biliary Cholangitis

Category: Medicine & Medical Specialties / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: Primary biliary cholangitis (PBC) is a chronic and progressive cholestatic autoimmune liver disease characterized by the destruction of intrahepatic bile ducts with portal inflammation and scarring. It frequently occurs in middle-aged women and may present with pruritus, jaundice, and right upper quadrant pain. In the setting of cholestasis, there is reduced bile acid production and consequently decreased intestinal absorption of cholesterol. This results in the endogenous synthesis of cholesterol in the liver and the secretion of very low-density lipoprotein. Mixed hyperlipidemia can be difficult to manage and the association with increased cardiovascular events remains unclear.

Case Presentation: A 46-year-old female with a past medical history significant for recurrent UTIs with MDR organisms, DM type II, autoimmune hepatitis, SLE, and primary biliary cirrhosis presented to the ED with a chief complaint of dysuria. In the ED, vitals were significant for hypertension, BP of 141/73. Her physical examination revealed xanthoma of the eyelids and infraumbilical abdominal pain. Lab workup revealed hemoglobin of 9.6,

WBC of 30.2, AST 119, ALT 105, ALP 825, total cholesterol of 689, triglycerides 301, LDL of 342, and HDL less than 20. Urine culture showed ESBL E. coli. The patient was admitted under hospital medicine. CT abdomen and pelvis showed evolving bilateral pyelonephritis. She completed a 14-day course of ertapenem. She was discharged home with PCP and Urology follow-ups.

Management: The management of hyperlipidemia is challenging in PBC, given the risks of hepatotoxicity associated with cholesterol-lowering medications. The risk of cardiovascular complications is low in the absence of metabolic syndrome. We suggest initiating moderate-intensity statins in the presence of diabetes or pre-existing CVD and close monitoring PBC in patients with pre-existing CVD, diabetes, or primary hypercholesterolemia.

Follow-up: The patient continued to have ongoing infection issues. She was admitted to the hospital with sepsis secondary to pelvic wall abscess approximately 1.5 years from admission, as discussed in the case presentation. Her hospital course was complicated by multiorgan failure, and she passed away.

Learning Objectives:

- Learning how to manage hyperlipidemia induced by Primary Biliary Cholangitis

References:

1. https://gastroenterology.acponline.org/archives/2021/05/28/5.htm

Cardiogenic Shock in the Setting of Myocarditis Due to COVID-19

Category: Medicine & Medical Specialties / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: Myocarditis is an inflammatory disease involving the myocardium, resulting in myocardial injury without any ischemic cause. The most common etiology of myocarditis remains viral, and the pathophysiology of COVID-19 viral myocarditis results from direct cell injury. We present an interesting case of COVID-19 induced myocarditis leading to cardiogenic shock with management complicated by the patient's anatomy.

Case Presentation: A 19-year-old female with no known past medical history presented to the ED with complaints of nausea, vomiting, diarrhea, and subjective fever of 5-day duration. The patient's vitals were significant for tachycardia and hypotension. Her oxygen saturation was 87% on room air. Her physical exam revealed no acute findings. Initial workup revealed a WBC 7.2 K/uL, hemoglobin 16.8 g/dL, platelets 119 K/uL, and lactic acid 7.9 mmol/L. Her high-sensitivity troponin was 1,228 ng/L, and BNP was 4,725 pg/mL. Her COVID-19 test was positive. Transthoracic echocardiogram showed an ejection fraction of 25 to 30%, severely reduced left ventricular systolic function, and a moderate to large pericardial effusion. The patient's condition declined, and she became hemodynamically unstable. She was started on pressor support with norepinephrine infusion. Interventional cardiology was consulted, given her cardiogenic shock, and coronary angiogram was negative for coronary artery disease. The patient underwent intra-aortic balloon pump placement as her anatomy would not allow for Impella placement, given the small diameter of her femoral artery. The patient's condition continued to deteriorate, and she required intubation in addition to the escalation of vasopressors. After a multidisciplinary collaboration, the

decision was made to cannulate for venoarterial extracorporeal membrane oxygenation. During the procedure, the patient was noted to be coagulopathic with profuse bleeding necessitating transfusion with packed red blood cells, platelets, and fresh frozen plasma. Despite multiple interventions, she went into asystole and passed away.

Final Diagnosis: Ultimately this patient was diagnosed with cardiogenic shock in the setting of myocarditis from COVID-19 infection.

Management: Management of COVID-19 viral myocarditis is supportive, and if cardiogenic shock is present, then liberal use of inotropes and vasopressors is recommended. Patients may also require mechanical circulatory support if cardiogenic shock continues to deteriorate.

Learning Objectives:

- Identifiy myocarditis as a possible complication of COVID-19 infection

Case of Initiating Dapagliflozin in a Patient with Ventricular Assistance Device

Category: Medicine & Medical Specialties / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: Sodium-Glucose Cotransporter-2 inhibitors (SGLT2i) were found to reduce the composite endpoint of cardiovascular death or worsening heart failure in the EMPEROR-Reduced trial and DAPA-HF trial. However, patients with ventricular assistance devices (VAD) were excluded from the aforementioned trials, therefore, the role of SGLT2i in the cohort of patients with VAD is unclear.

Case Presentation: A 67-year-old male with NYHA Class II ACC/AHA stage D heart failure with reduced ejection fraction (HFrEF), secondary to nonischemic cardiomyopathy, presented for elective admission for plans for VAD implantation. He was status post HeartMate III VAD implantation as destination therapy. Dapagliflozin 10 mg was initiated on the day of discharge, along with other guideline-directed medical therapy. During approximately three months after initiation, dapagliflozin was well tolerated without any negative change in the disease status. His vital signs remained stable, and lab values were significant for improvement in NT-proBNP with stable creatinine and sodium.

Final/Working Diagnosis: Reduced ejection heart failure and post HeartMate III VAD implantation

Management/Outcome: To date, no clinical data about the role of SGLT2i in patients with VAD has been reported. Nevertheless, dapagliflozin was initiated for this patient given the substantial benefits of SGLT2i therapy reported. In this case report, dapagliflozin was initiated after the implantation of VAD without any adverse events noticed. Considering the substantial benefits of SGLT2i therapy in patients with HFrEF, it is imperative to evaluate the efficacy and safety of SGLT2i therapy in patients with VAD.

Learning Objectives:

- Discuss the use of SGLT2 inhibitors in patients with ventricular assistance devices

References:
1. Packer M, et al. Cardiovascular and Renal Outcomes with Empagliflozin in Heart Failure. N Engl J Med. 2020 Oct 8;383(15):1413-1424. doi: 10.1056/NEJMoa2022190. Epub 2020 Aug 28. PMID: 32865377.
2. McMurray JJV, et al. Dapagliflozin in Patients with Heart Failure and Reduced Ejection Fraction. N Engl J Med. 2019 Nov 21;381(21):1995-2008. doi: 10.1056/NEJMoa1911303. Epub 2019 Sep 19. PMID: 31535829.
3. Heidenreich PA, et al. 2022 AHA/ACC/HFSA Guideline for the Management of Heart Failure: A Report of the American College of Cardiology/American Heart Association Joint Committee on Clinical Practice Guidelines. Circulation. 2022 May 3;145(18):e895-e1032. doi: 10.1161/CIR.0000000000001063. Epub 2022 Apr 1. Erratum in: Circulation. 2022 May 3;145(18):e1033. PMID: 35363499.

Cobalt Toxicity in Patient with Metal-on-Metal Hip Replacement

Category: Medicine & Medical Specialties / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: Cobalt toxicity can result from chronic low-level exposure and presents various neurological symptoms. We present a case of systemic cobalt toxicity from a prior total hip arthroplasty.

Case presentation: A 47-year-old male with a past medical history significant for ankylosing spondylitis and previous metal-on-metal right total hip arthroplasty performed 14 years prior presented to his primary care doctor with a 3-day history of neuropathic pain in bilateral hands and feet. He also endorsed sleep disturbances and night sweats. His vitals were stable and physical examination, including a complete neurologic examination, was unremarkable. The initial workup was unrevealing, including a complete blood count, comprehensive metabolic panel, Hemoglobin A1c, Vitamin B12, Iron, Ferritin, Thyroid function, and HIV testing. The cause of his neuropathic pain was suspected to be due to ankylosing spondylitis.

A year later, he was evaluated by an orthopedic surgeon for right hip pain. His neurological symptoms persisted with new symptoms of diarrhea, headaches, memory problems, and anxiety. His ESR was 25, and his CRP was 1.36. Given his neurological symptoms and hip pain, the cobalt level was checked and found to be elevated at 11.5 mcg/L, and his chromium level was 7.8 mcg/L. The X-ray of his right hip showed a vertically displaced acetabular component of his total hip arthroplasty with osteolysis.

Final diagnosis: He was diagnosed with Cobalt toxicity.

Follow up: He underwent revision of his right total hip arthroplasty with the placement of a ceramic acetabulum. Bacterial and fungal joint cultures, obtained intraoperatively, were negative. His neurologic symptoms completely resolved over the coming months.

The mechanism of cobalt toxicity remains unclear; proposed mechanisms include enzymatic inhibition and direct cytotoxicity. The diagnosis depends on a combination of history and laboratory confirmation with cobalt levels. Management of cobalt toxicity has not been well documented. Therefore, management should focus on eliminating cobalt exposure and providing supportive care.

This case highlights a diagnostically challenging and rare presentation of a patient with seemingly unconnected neurological symptoms, which were later determined to be secondary to Cobalt toxicity. We recommend evaluating cobalt toxicity in patients with prior total hip arthroplasty and neurological symptoms.

Learning Objectives:

- Identify the risk factors for Cobalt toxicity.
- Recognize the neurologic presentation of Cobalt toxicity and be able to diagnose this condition.

References:

1. Cheung, A. C., Banerjee, S., Cherian, J. J., Wong, F., Butany, J., Gilbert, C., Overgaard, C., Syed, K., Zywiel, M. G., Jacobs, J. J., &; Mont, M. A. (2016). Systemic cobalt toxicity from total hip arthroplasties. The Bone & Joint Journal, 98-B(1), 6–13. https://doi.org/10.1302/0301-620x.98b1.36374

A Guide for the Management of Refractory Ventricular Tachycardia in Complicated Cardiac Sarcoidosis

Category: Medicine & Medical Specialties / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: Cardiac Sarcoidosis (CS) is an inflammatory myocardial disease characterized by non-caseating granuloma (NG) deposition. Ventricular tachycardia is a life threatening complication of cardiac sarcoidosis which can lead to sudden cardiac death. According to the heart rhythm society consensus, catheter ablation is a last resort following immunosuppression and antiarrhythmic medication for treating ventricular tachycardia. Our case discusses the management of recurrent ventricular tachycardia in a complicated case of cardiac sarcoidosis patients.

Case Presentation: A 62-year-old female with a history of chronic lymphoid lymphoma (CLL) presented with shortness of breath. The patient's work-up showed complete heart block and cardiomyopathy. Left heart catheterization showed non-obstructive coronary arteries. The initial decision was made for pacemaker implantation; however, cardiac sarcoidosis was suspected based on complete heart block in the setting of non-ischemic cardiomyopathy. Cardiac MRI was done, which showed patchy transmural delayed hyper-enhancement in the inferior septal region. A bi-ventricular Implantable cardioverter defibrillator (ICD) was implanted. Patient was referred for a cardiac PET scan to outside facility, which showed increased FDG uptake in the inferior septum and inferior walls.

Working Diagnosis: Cardiac Sarcoidosis

Management: The patient was started on steroids. A few months later patient presented with ventricular storm with thirty-nine total ICD shocks. She was treated with intravenous amiodarone and discharged on oral amiodarone and methotrexate therapy. Patient again experienced two ICD shocks in a course of four months due to ventricular tachycardia. She underwent VT ablation of the left ventricular inferior septum and right ventricular

moderator band and apex. Since patient suffered from COVID 19 infection during that admission, amiodarone was changed to mexiletine to avoid lung toxicity. The patient experienced multiple ICD shocks six months later. During this admission, patient received aggressive treatment with sotalol and rituximab along with steroids, methotrexate, and mexiletine. The patient has not experienced ventricular tachycardia since the last episodes two years ago. Follow-up cardiac PET CT showed no scintigraphy evidence of active cardiac sarcoidosis.

Conclusion: In cardiac sarcoidosis patients refractory to catheter ablation, a combination of antiarrhythmic medications along with immunosuppressive medications can help prevent recurrent ventricular tachycardia.

Learning Objectives:

- Discuss management of ventricular tachycardia in complicated cardiac sarcoidosis.
- Discuss the role of immunosuppressants along with anti-arrhythmic medications in preventing ablation refractory ventricular tachycardia

Ependymoma Complicating Neurofibromatosis

Category: Medicine & Medical Specialties / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: Patients with neurofibromatosis are at risk of developing central nervous system tumors due to the inactivation of neurofibromin, an inactivator of proto-oncogene Ras. The incidence of ependymoma in neurofibromatosis is variable and could be seen with both neurofibromatosis 1 and neurofibromatosis 2. Ependymoma arises from the lining of the central nervous system called ependyma and it accounts for 1.9% of all brain tumors. We discuss a patient here to highlight the association between neurofibromatosis and ependymoma.

Case Discussion: A 52-year-old man with a history of neurofibromatosis presented with the complaints of gradually progressive weakness of the upper and lower extremities over past 6 months resulting in quadriparesis. Of note, six months prior to presentation he was diagnosed with a cervical spine tumour but was deemed to be a poor surgical candidate at that time in a different facility.

On presentation, he was afebrile and hemodynamically stable. Physical examination revealed 0/5 strength in both the upper and lower extremities on the right and 3/5 strength in the upper and lower extremities on the left. Mild pitting edema was present in the lower limbs. Cardiopulmonary examination was unremarkable.

He was started on IV dexamethasone. Magnetic Resonance Imaging of the spine and the brain revealed expansion of the cervical spine with caudal extension into the medulla and to the thoracic spine. The patient's personal history of neurofibromatosis and the radiological features of the intramedullary cervical spine tumour, raised clinical suspicion for the tumour being ependymoma. Following multispecialty discussion with the medical team, oncology team and neurosurgery team, decision was made for transfer to higher center for biopsy, pathological confirmation and surgical management.

Conclusion: Ependymoma has an indolent course and symptoms occurs in less than 20% patients. Most common location is cervical spine and symptoms could include back pain, weakness, sensory disturbances. Symptomatic patient require surgical resection. Asymptomatic patients are monitored closely for development of symptoms.

Ependymoma should be considered as a differential in patients with neurofibromatosis and early neurosurgical intervention should be considered in these patients. Good outcomes are seen when early diagnosis is established and total resection of the tumor is performed before onset of paralysis. Our patient highlights the need for high index of clinical suspicion of ependymoma in patients who present with cervical spinal tumour in a patient with neurofibromatosis, and the need for timely and appropriate intervention.

Learning Objectives:

- Ependymoma as a differential diagnosis in patients with neurofibromatosis presenting with central nervous system tumors.

Session 4C - Emergency Medicine; and Medicine & Medical Specialties

Blunt Trauma/Impalement from Deer Leading to Delayed Intestinal Injury

Category: Emergency & Disaster Medicine / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Intestinal injury can be seen in both blunt and penetrating trauma to the abdomen. Blunt abdominal trauma typically result in injuries to the solid organs. However, approximately 3% of blunt abdominal traumas can result in intestinal injuries. Intestinal injuries are usually caused by the intestines being crushed between an external object and internal structures. This can be common in patients with prior abdominal surgeries. Surgeries increase the risk of adhesion formation which can lead to traction and shear injuries. Traction and shear injuries to the intestines can cause devascularization of the affected tissue further complicating intestinal injury. In this case, we will discuss a 49-year-old Caucasian male presenting with small bowel obstruction and perforation after being attacked by a deer. The patient has a past medical history of chronic back pain and a past surgical history of abdominal hernia repair 2 years ago. He presented to the Emergency Department (ED) with complaints of abdominal pain and chest pain that had been ongoing since he was charged to the ground by a deer 3 days prior. Patient was initially evaluated at a different emergency department on the day of occurrence and was reported to have a normal abdominal scan followed by repairs of multiple superficial lacerations. He was then discharged with a prescription for Augmentin. Patient presented to our ED with complaints of worsening right abdominal pain. Physical exam revealed moderate tenderness to the right anterior and inferior lateral chest wall. There was severe tenderness and erythema to the right upper and lower abdomen that extended to the right flank. Skin revealed mottling in bilateral lower extremities that extended proximally to his lower abdomen with focal epigastric abdominal ecchymosis. CBC was remarkable for an elevated white count of 14.1 with neutrophils at 87.2% and Sodium of 126. His liver function tests and lactate were within normal limits. A CT abdomen/pelvis with contrast was obtained revealing a right lower quadrant hernia defect containing dilated small bowel loops proximal to identified transition point with multiple foci of gas extending into the soft subcutaneous tissues suggestive of bowel injury. Due to these concerning findings, patient was immediately started on Vancomycin and Zosyn and general surgery was consulted. Patient was then taken for an exploratory laparotomy where he was found to have a segment of strangulated small bowel with identified portions of perforation located within the ventral hernia that was previously repaired. The decision was then made to resect this portion of the bowels.

Learning Objectives:

- Be able to recognize signs of delayed presentations of blunt mesenteric and intestinal trauma after a normal initial scan
- Upon completion of this lecture, learners should be better prepared to manage patients with delayed intestinal trauma

References:

1. Pastorino A, Alshuqayfi AA. Strangulated Hernia. [Updated 2021 Dec 28]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK555972/
2. McMahon KR, Balasubramanya R. Intestinal Trauma. [Updated 2022 May 8]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK557624/

SARS-Cov-2 Infection Uncovering Latent Mycobacterium Leprae Infection

Category: Medicine & Medical Specialties / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: As the number of coronavirus disease 2019 (COVID-19) cases rise globally, more information is being brought to the light regarding the relationship between COVID-19 and leprosy. There are very few reports of leprosy with concurrent COVID-19. Limited literature suggests two theories have been postulated thus far: (1) COVID-19 infection may trigger a leprosy reaction; and (2) leprosy treatment may cause patients to experience a severe manifestation of COVID-19 infection.

Case Presentation: A 46-year-old Fitzpatrick VI, African- American man with a significant past medical history of recent COVID-19 infection in April 2020 presented to the dermatology clinic on July 2, 2020 with a three-week history of a rash on his face. The patient reported that he migrated from Guyana three years ago and did not have a history of or exposure to leprosy. Of note, the patient did admit to an increased amount of stress amidst the COVID-19 pandemic. On physical examination, the patient had multiple edematous and erythematous plaques of his forehead, periocular areas, nose, malar cheeks, and temples; forming the classical leonine facies. The 3mm punch biopsy was reported as multibacillary leprosy with innumerable beaded or fragmented organisms. The patient was started on Clofazimine 50mg daily and Rifampin 600mg daily, and sent for glucose- 6-phosphate dehydrogenase deficiency testing before starting Dapsone 100mg daily. Infectious disease was consulted for further management and the Health Department was notified.

Final/Working Diagnosis: The first theory states that COVID-19 is a risk factor for triggering a leprosy reaction due to its effect on various immunologic events. Type 2 leprosy is known to be associated with dermal neutrophil infiltrate, leading to skin disfiguration. Overall, this first theory suggests that COVID-19 may trigger lepromatous reactions. The second theory proposes that leprosy patients undergoing active treatment with anti-inflammatory medications are at an increased risk of acquiring severe manifestations of COVID-19.

Management/Outcome: Leprosy reactions may be triggered by stress and infections, and the COVID-18 pandemic has caused significant emotional and psychological stress on patients. When considering this and the two theories proposed, our unique case suggests that COVID-19 may induce or exacerbate leprosy reactions.

Learning Objectives:

- Discuss two theories of how COVID-19 can exacerbate or trigger Type 1 and Type 2 leprosy.
- Measure the immunologic leprosy reactions triggered by stress and infections.
- Diagnose the facial and dermatologic features of leprosy, including edematous and erythematous plaques of his forehead, periocular areas, nose, malar cheeks, and temples.

References:

1. Rathod S, Suneetha S, Narang T, et al. Management of Leprosy in the Context of COVID-19 Pandemic: Recommendations by SIG Leprosy (IADVL Academy). Indian Dermatol Online J. 2020;11(3):345-348. Published 2020 May 10. doi:10.4103/idoj.IDOJ_234_20
2. Schmitz V, Dos Santos JB. COVID-19, leprosy, and neutrophils. PLoS Negl Trop Dis. 2021;15(1):e0009019. Published 2021 Jan 7. doi:10.1371/journal.pntd.0009019itz
3. Antunes DE, Goulart IMB, Goulart LR. Will cases of leprosy reaction increase with COVID-19 infection? PLoS Negl Trop Dis. 2020;14:e0008460 10.1371/journal.pntd.0008460
4. Santos VS, Quintans-Júnior LJ, Barboza WS, Araújo AAS, Martins-Filho PR. Clinical characteristics and outcomes in patients with COVID-19 and leprosy [published online ahead of print, 2020 A
5. Nery JA, Bernardes Filho F, Quintanilha J, Machado AM, Oliveira Sde S, Sales AM. Understanding the type 1 reactional state for early diagnosis and treatment: a way to avoid disability in leprosy. An Bras Dermatol. 2013;88(5):787-792. doi:10.1590/abd1806- 4841.20132004
6. Bilik L, Demir B, Cicek, D. Leprosy Reactions.
7. Hansen's Disease - The Forgotten and Neglected Disease. 2019. doi: 10.5772/intechopen.72481
8. Thng ZX, De Smet MD, Lee CS, et al. COVID-19 and immunosuppression: a review of current clinical experiences and implications for ophthalmology patients taking immunosuppressive drugs [published online ahead of print, 2020 Jun 12]. Br J Ophthalmol. 2020;bjophthalmol-2020-316586. doi:10.1136/bjophthalmol-2020-316586
9. Liu D, Ahmet A, Ward L, et al. A practical guide to the monitoring and management of the complications of systemic corticosteroid therapy. Allergy Asthma Clin Immunol. 2013;9(1):30. Published 2013 Aug 15. doi:10.1186/1710-1492- 9-30
10. Barnes BJ, Adrover JM, Baxter-Stoltzfus A, et al. Targeting potential drivers of COVID-19: Neutrophil extracellular traps. J Exp Med. 2020;217(6):e20200652. doi:10.1084/jem.20200652
11. Mehta P, McAuley DF, Brown M, et al. COVID- 19: consider cytokine storm syndromes and immunosuppression. Lancet. 2020;395(10229):1033-1034. doi:10.1016/S0140-6736(20)30628-0

Myxedema Coma in a Patient with Subclinical Hypothyroidism. Don’t be Fooled by the Labs

Category: / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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INTRODUCTION: Myxedema coma is considered an endocrine emergency presenting with symptoms of slowed multi-organ dysfunction, including abnormal mental status and hypothermia. The diagnosis is typically clinical and must be differentiated from other causes of altered mental status. To the best of our knowledge, subclinical hypothyroidism is a rare cause of myxedema coma with very few reported cases in the medical literature.

DESCRIPTION: We present a 62-year-old female with a longstanding history of bipolar disorder and epilepsy presenting with myxedema coma and subclinical hypothyroidism. Our patient had been transferred to the emergency department with reported hypotension and altered mental status. On admission, the patient was found to have evidence of delirium, bradyphasia, and delayed response to noxious stimuli. On examination, she was hypothermic (temperature of 31.1C), blood pressure was 113/58 mmHg, respiratory rate 16 breaths per minute, and Glasgow Coma Scale (GCS) was 11/15. She initially met clinical criteria for Myxedema and was started on levothyroxine, liothyronine, and hydrocortisone. She also met 2/4 SIRS criteria. Intravenous fluids and antibiotics were initiated while undergoing further diagnostic testing. Soon after Hospital admission the patient's condition quickly deteriorated with the presence of hypotension (75/48 mmHg), hypoxia (SpO2 82%), heart rate of 80 beats per minute, and findings consistent with hypercapnic respiratory failure, her GCS worsened to 5/15. She was intubated and admitted to the Intensive care unit. Laboratory evaluation revealed elevated thyroid-stimulating hormone (TSH) (13.4mU/L) with a normal free thyroxine (T4) (0.85 ng/dL) consistent with subclinical hypothyroidism. The patient cortisol level was unremarkable,hyperammonemia (43), mildly elevated lipase (505), and hypoglycemia (48) were found. Blood cultures, bronchial fluid culture, and CSF analysis were unrevealing. No infectious source was identified; thus, antibiotics were discontinued, and based on her labs, the concern for adrenal insufficiency was excluded. Subsequently, the patient's condition gradually improved, she was transitioned to oral levothyroxine and by the time of discharge on week three, she had returned to her baseline.

DISCUSSION: Our patient had myxedema coma with laboratory findings consistent with Subclinical hypothyroidism. Although biochemical hypothyroidism is usually expected, this case highlights the importance of identifying Myxedema Coma when evaluating a patient presenting with altered mental status and hypotension. In adition, recognizing the absence of laboratory features of hypothyroidism (E.g., presence of subclinical hypothyroidism) doesn't exclude the diagnosis. Treatment shouldn't be delayed considering mortality remains very high.

Subclinical hypothyroidism is characterized by a serum thyroid-stimulating hormone (TSH) level above the upper limit of the reference range and normal free thyroxine (T4) level; before making this diagnosis, transient elevation of serum TSH should be ruled out by repeating the measurement of TSH in 2 to 3 months. Also, subclinical hypothyroidism is an early form of primary hypothyroidism affecting up to 10% of the population. Since guidelines differ regarding when to treat subclinical hypothyroidism, is important to follow up on TSH levels given that thyroid hormone replacement therapy can result in clinical benefits and may have a significant effect on cardiovascular events or mortality as we can see in our patient. We strongly believe that treatment in the outpatient setting could have prevented her hospitalization and further deterioration.

Hyponatremia related to megestrol use

Category: Medicine & Medical Specialties / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: Megestrol acetate is a synthetic progestin that binds to the glucocorticoid receptor. Megestrol is a modified derivative of the naturally occurring hormone progesterone, indicated primarily to stimulate appetite for the treatment of significant, inexplicable weight loss in HIV/AIDS patients and anorexia or cachexia syndrome. It has an inherently greater potential to suppress the HPA axis than to induce glucocorticoid-like clinical effects. We present here an interesting case of megestrol-induced HPA axis suppression leading to chronic hyponatremia.

Case Presentation: A 60-year-old malnourished female with multiple comorbidities including Chronic obstructive pulmonary disease and non-insulin-dependent diabetes mellitus presented with shortness of breath with productive cough and worsening generalized weakness for the past 1 week. She was afebrile and hemodynamically stable and saturating on 3L. On physical examination, she was alert oriented x3 with intermittent confusion; mild respiratory distress.
Initial investigations demonstrated leukocytosis 14.2, hemoglobin 11.0, sodium 117, chloride 75. Further evaluation for hyponatremia showed urine osmolality 224 and urine sodium 49. Morning cortisol, TSH, and free T3 levels were reduced. Cosyntropin test demonstrated cortisol levels of 14.2 at the half-hour indicating adrenal insufficiency. The chest x-ray was normal.

The patient was started on normal saline due to suspicion of hypovolemic hyponatremia. Further review of her medical records revealed chronic hyponatremia with baseline sodium in mid 120s. Medication review revealed the use of megestrol acetate 40 mg twice daily is known to cause HPA axis suppression leading to hyponatremia. Megestrol was discontinued due to suspicion of being the culprit drug for HPA suppression and adrenal insufficiency.

The patient's sodium improved to 127 with normal saline and discontinuation of megestrol. Hyponatremia was attributed to megestrol-induced HPA suppression causing hyponatremia. COPD exacerbation was concomitantly managed with albuterol inhalation, antibiotics, oxygen and oral prednisone during the hospital stay.

Working Diagnosis: Megestrol-induced hyponatremia

Outcome and Follow-up: Our patient had chronic hyponatremia related to HPA axis suppression related to long term megestrol use. After discontinuation of megestrol, her sodium improved and has been within the normal range on follow-up on 2 different occasions after discharge. The concern of SIADH was ruled out following significant improvement in the sodium levels after discontinuation of megestrol and treatment with steroids. These point to a high probability of hyponatremia being related to the HPA axis suppression caused by megestrol. Our patient highlights a rarely thought of clinical association between megestrol and hyponatremia related to HPA suppression. We suggest monitoring basic metabolic profile in patients who are on long-term megestrol acetate. Patients should be advised to stop megestrol if they're known to have HPA axis suppression. Drugs that could potentially cause SIADH and hyponatremia should be cautiously used in patients taking Megestrol acetate.

Learning Objectives:

- Recognizing megestrol acetate as a potential risk factor for causing hyponatremia.
- Encourage further investigation for Megestrol-induced hyponatremia secondary to HPA suppression to find its true incidence.

Internal Shingles found to be Malignant Pleural Mesothelioma

Category: Medicine & Medical Specialties / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: Malignant mesothelioma is a rare aggressive cancer that can arise from the membranes of several organs. Malignant pleural mesothelioma (MPM) makes up 94% of the 3000 new cases of mesothelioma diagnosed every year in the United States. Clinically, MPM presents with nonspecific symptoms of progressive dyspnea, cough, pleural effusion and occasionally weight loss. While local invasion has been noted before, distant metastasis is rare. MPM has a broad range of clinical manifestations, leading to lower detections rates and advanced-stage diagnoses. Here we present a unique presentation of MPM highlighting importance of early clinical detection of this rare cancer.

Case Presentation: Patient is a 70-year-old female with past medical history of breast cancer status post lumpectomy who presented to outpatient clinic for insidiously worsening sharp right-sided chest pain for about a year. She sought treatment from multiple physicians and chiropractors for pain management, but noted little improvement. The patient was diagnosed with zoster sine herpeti (internal shingles) and treated with gabapentin for post-herpetic neuralgia with minor improvement in symptoms. Of note, patient lost over 30 pounds during this year, which she attributed to loss of appetite and persistent pain.

Imaging of patient's chest revealed a pleural effusion and she was scheduled for a thoracentesis. The procedure was complicated by a hydropneumothorax, which was then treated with a chest tube. Patient subsequently underwent video-assisted thoracoscopic surgery (VATS), which revealed a thickened pleura.

Final/Working Diagnosis: Pleural biopsy showed malignant pleural mesothelioma (MPM) of the biphasic histologic subtype. CT scan of the chest confirmed mass extension throughout the R pleura and invasion into the ribs.

Management/Outcome/Follow-up: Patient was admitted was to in-patient medicine team for pain management and goals of care discussion. Vitals signs were remarkable for persistent tachycardia. On physical exam, patient was cachectic with fluctuating mental status. Multimodal pain control was started with pregabalin and hydromorphone PCA, but patient continued to experience unbearable pain.

Multiple pain management regimens were attempted over the course of a month of in-patient treatment. Eventually, an intrathecal pump alleviated the pain considerably. After an extensive goals of care discussion, the patient decided to pursue hospice care.

Learning Objectives:

- Discuss an atypical clinical presentation of a rare malignancy: pleural mesothelioma
- Examine the pain management strategies that effectively treat chest wall pain from malignant invasion into nerves

References:

1. Beebe-Dimmer JL, Fryzek JP, Yee CL, Dalvi TB, Garabrant DH, Schwartz AG, Gadgeel S. Mesothelioma in the United States: a Surveillance, Epidemiology, and End Results (SEER)-Medicare investigation of treatment patterns and overall survival. Clin Epidemiol. 2016 Oct 26;8:743-750. doi: 10.2147/CLEP.S105396. PMID: 27822122; PMCID: PMC5087771.
2. Benjamin Wadowski ; Yin P. Hung; Assunta De Rienzo. Malignant pleural mesothelioma subtypes. Atlas Genet Cytogenet Oncol Haematol. 2019-12-01

Heyde Syndrome and COVID-Induced Hypercoagulability: A Case

Category: Medicine & Medical Specialties / Poster Abstract Presentation

Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: The Coronavirus Disease 2019 (COVID-19) pandemic continues to affect patients and health systems across the world, and present new challenges to team members taking care of those patients suffering from the disease and its sequelae. At the same time, Heyde syndrome, a condition linking gastrointestinal bleeding, aortic stenosis, and von Willebrand disease (vWD), remains likely underdiagnosed in the same patient population suffering the majority of hypercoagulability complications.

Case Presentation: 81 year old female with history of emphysema, heart failure, and aortic stenosis was diagnosed with COVID-19 pneumonia, subsequently developed bilateral tibial deep vein thromboses, and then presented with symptomatic anemia approximately one month later. Lab testing showed a hemoglobin of 5.5, and she underwent esophagogastroduodenoscopy, which revealed gastrointestinal angiodysplasia to be the source of her anemia. Her anticoagulation was stopped and she was treated with supplemental oxygen, proton pump inhibitors, iron supplementation, and blood transfusions.

Working diagnosis: Heyde Syndrome

Outcome: Her disease course became suspicious for Heyde syndrome, and illuminated important questions that could impact the care and prognosis of patients with similar conditions in the future as we continue to learn more about long term consequences and outcomes post-COVID-19, particularly in terms of their overlap with under-recognized conditions such as Heyde syndrome.

Learning Objectives:

- Identify the patient population mostly likely to be affected by Heyde syndrome and describe the pathophysiology
- Discuss treatment options for patients with diagnosed Heyde syndrome and a history of deep vein thrombosis

References:

1. Theis SR, Turner SD. Heyde Syndrome. [Updated 2021 Jul 13]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK551625/
2. Pate GE, Chandavimol M, Naiman SC, Webb JG. Heyde's syndrome: a review. J Heart Valve Dis. 2004;13(5):701-712.

Outcomes of Patients with Mitral Regurgitation and concomitant Aortic and Tricuspid Valve Disease after Transcatheter Edge-to-Edge Mitral Valve Repair

Category: Medicine & Medical Specialties / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Background: Patients with severe mitral valve regurgitation (MVR) and coincidental aortic or tricuspid valve disease represent a management challenge. Traditionally, if an interdisciplinary heart team decides to perform open-heart surgery to replace the mitral valve, aortic stenosis or regurgitation are usually corrected simultaneously. However, patients at high surgical or prohibitive risks are usually referred to a less invasive alternative such as transcatheter edge-to-edge mitral valve repair (TEER) for severe mitral valve regurgitation. We decided to observe the outcomes of the patients who underwent TEER for severe mitral valve regurgitation associated with aortic or tricuspid valve disease.

Methods: In this retrospective cohort study, we participated 170 patients that underwent TEER. Patients only with severe MVR 73/170 (42.9%) were compared to patients who had associated either moderate to severe aortic stenosis or regurgitation or tricuspid insufficiency 97/170 (57.1%). The patients had similar basic characteristics in terms of gender, prior diseases such as stroke, peripheral arterial disease, diabetes, heart failure, chronic lung disease, KCCQ12 score, MR severity, and ejection fraction. We assessed the impact of coincidental aortic or tricuspid valve disease on post-TEER outcomes such as MR reduction, total-in-hospital stay, and mortality.

Results: Post-TEER, no difference was found in reducing the severity of MR (p=0.91.), total-in-hospital stay (p=0.77), and survival between patients with only MVR and patients with MVR associated with either aortic stenosis or regurgitation or tricuspid insufficiency. Both groups exhibited a reduction in the severity of MR, average total in-hospital stay of 6.33~ 6.73 (mean 6.53), and survival of 100% compared to another group with good outcomes.

Conclusions: There was no difference in feasibility and shorth term outcomes of TEER in patients only with MVR compared to patients with MVR and associated aortic or tricuspid valve disease. In the era of minimally invasive procedures such as TEER, when performed in patients with concomitant and very often complicated valve pathology, we need large-scale trials to follow up on these patients' short- and long-term outcomes.

Learning Objectives:

- Short-term outcomes of octogenarians and nonagenarians with concomitant aortic and tricuspid valve pathology were referred to TEER instead of surgery.
- This warrants future studies to address the use of TEER in patients with complicated valve pathologies and their long-term outcomes

References:

1. Lee CW, Sung SH, Huang WM, Tsai YL, Chen HY, Hsu CP, et al. Can Elderly Patients with Severe Mitral Regurgitation Benefit from Trans-catheter Mitral Valve Repair? Korean Circ J. 2019 Feb 20;49(6):532–41.
2. Feldman T, Kar S, Elmariah S, Smart SC, Trento A, Siegel RJ, et al. Randomized Comparison of Percutaneous Repair and Surgery for Mitral Regurgitation: 5-Year Results of EVEREST II. Journal of the American College of Cardiology. 2015 Dec 29;66(25):2844–54.

Routine UroLift Procedure Resulting in a Pelvic Hematoma Requiring Critical Care: A Case Report

Category: Medicine & Medical Specialties / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction; Case Presentation: An 85 y.o. male with a medical history of myelodysplastic syndrome, hereditary hemochromatosis, hypertension, hyperlipidemia, right subacute MCA infarct, and BPH who presented to the ED with hypotension, weakness, nausea, vomiting and 2 episodes of loose stool. He had previously undergone a UroLift procedure earlier that morning and became profoundly weak, altered, incoherent, and hypotensive (60/40), which resulted in EMS being called to his home. The patient arrived to the ED roughly 15 hours after his surgery and received IV fluids with response. He was also found to have a lactic acid of 11.9, AKI with his Cr of 2.01 and HCO3 of 16.2, WBC count of 24.5, and hemoglobin of 5.4. CT renal protocol revealed a large mesenteric hematoma with extravasation from the internal iliac artery. He had large-bore IV access and central access placed, received 2 units of PRBCs with hemoglobin correction to 8.2, interventional radiology was consulted, and the patient was transferred to the ICU for further critical care management of hemorrhagic shock.
During his first night of ICU management, pt had worsening tachycardia requiring an increase in the Levophed and required another 1L bolus of fluids, 1 unit of platelets, and another unit of PRBC. Given his leukocytosis, 42% bands, and tachycardia, there was concern for possible sepsis. Blood, urine, and sputum cultures were obtained, and the patient was placed on Cefepime, Vancomycin and Metronidazole. He underwent geofoam embolization of a branch off the left internal iliac artery and bilateral internal iliac arteries that morning. Repeat hemoglobin levels that morning were 6.3, requiring another unit of blood and 1 unit of cryoprecipitate. Hemoglobin and hematocrit were trended every 4 hours. The patient was also found to be C. difficile positive and was initiated on PO Vancomycin for 10 days. Hemoglobin was stable and he was transferred to the floor.

Final/Working Diagnosis: Pelvic Hematoma due to postoperative UroLift procedure complication.

Management/ Outcome/and or Follow-up: Patient remained stable once transfer out of the MICU. Due to prolonged course, he was ultimately discharged to a SNF for rehabilitation.

Learning Objectives:

- Recognize hemorrhagic shock, treatment, and correlation with history for potential source.

References:

1. Roehmholdt, Max J., and Dennis F. Bentley. “Large Pelvic Hematoma after UroLift® Procedure for Treatment of BPH with Median Lobe.” Case Reports in Urology, vol. 2022, 2022, pp. 1–4., https://doi.org/10.1155/2022/7065865.
2. Pollock G. R., Bergersen A., Chaus F. M., Gretzer M. Pelvic hematoma following UroLift procedure for BPH. Urology . 2019;133:e3–e4. doi: 10.1016/j.urology.2019.08.015. [PubMed] [CrossRef] [Google Scholar]
3. LLC, Teleflex. “UroLift® Peer Reviewed Clinical Results: FDA Cleared.” UroLift® Peer Reviewed Clinical Results | FDA Cleared, https://www.urolift.com/physicians/results?hsCtaTracking=c59ae10b-734f-4dc3-821f-0c2a41e61154%7Cb8fd5e37-9d81-4fc7-bceb-acbd1a00a2b3.

4. Cannon, Jeremy W., and Author AffiliationsFrom the Division of Traumatology. “Hemorrhagic Shock: Nejm.” New England Journal of Medicine, 10 May 2018, https://www.nejm.org/doi/full/10.1056/nejmra1705649.

Session 6A - Bioethics & Medical Education and Medicine & Medical Specialties

Knowledge of Internal Medicine Residents on Healthcare Charges

Category: Bioethics & Medical Education / Oral Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: Prices for routine healthcare services vary significantly from one institution to another, even within the same region. Price transparency advocates emphasize allowing consumers to analyze the available price options and make an informed decision while opting for medical services. In order to increase price transparency, the Centers for Medicare and Medicaid Services (CMS) mandated hospitals to publish the standard charges of all hospital items, services, and 300 shoppable services on hospital websites from Jan 1, 2021. With this in mind, a study was done to assess Internal Medicine residents' knowledge regarding healthcare charges.

Methodology: A prospective study was done at the Internal Medicine (IM) residency program at North Alabama Medical Center (NAMC), which is a 263-bed regional facility with over 200 physicians covering 42 medical specialties. The IM residency program was started in 2020, and has a total of 36 residents across 3 batches.

A questionnaire was used to collect information on resident demographics and residents’ perceptions on importance and need for transparency. Another questionnaire with a list of 20 commonly ordered investigations was used where the residents quoted an estimate for each investigation. This included 9 laboratory, 2 microbiology, and 9 radiology investigations. The estimate was accepted as correct if the response was within a 25% range of the actual cost.

Results: Total 35 questionnaires were sent out and 32 responses were received, yielding a response rate of 91.4%. Of the respondents, 37.6% were interns and 62.4% were senior residents.

Among the participants, 56.2% residents felt they do not have adequate knowledge of the cost of commonly used investigations. Knowing the cost of investigations would likely influence the orders of 90.6% residents. Improved access to the cost of investigations would likely influence the orders of 84.4% residents. The patient’s insurance status affected the orders of 53.1% residents. 93.8% residents felt that they should consider cost-effectiveness while ordering investigations.78.2% residents felt that awareness of the cost of investigations will allow patients to make an informed decision regarding their medical care.

Overall, 18.1% cost estimates were within the 25% range of actual cost, including 17% laboratory, 23.5% microbiology, and 13.9% radiological estimates.

Interestingly, 100% residents expressed that they would like to have a better understanding of the cost of investigations ordered routinely, of whom 62.4% residents had spent 2 years at NAMC and 56.2% had previous work experience in the US.

Conclusion: This study identified a potential area that needs academic advancement to empower future physicians with vital information on routine investigations to make cost-conscious decisions for their patients. A curriculum is proposed as part of the Systems-Based Practice core competency to educate IM residents at NAMC about healthcare costs and price transparency to serve this purpose. We intend to follow up with a repeat study in 6 months to assess the knowledge gained by residents.

Acknowledgment:
1. NAMC Internal Medicine Program, Program Director and Designated Institutional Official and residents.
2. Tek Sehgal R, Gorman P. Internal medicine physicians' knowledge of health care charges. J Grad Med Educ. 2011;3(2):182-187. doi:10.4300/JGME-D-10-00186.1
3. https://www.cms.gov/hospital-price-transparency/hospitals

Learning Objectives:
- The presentation is intended to create an awareness among physicians and physicians-in-training towards the knowledge of residents on the healthcare related expenditure.
- This presentation could bring about an improvement in medical education as a part of system based practice core competency.

References:
1. Tek Sehgal R, Gorman P. Internal medicine physicians' knowledge of health care charges. J Grad Med Educ. 2011;3(2):182-187. doi:10.4300/JGME-D-10-00186.1
2. https://www.cms.gov/hospital-price-transparency/hospitals

The Current State of Academic Medicine: An Updated Look at Medical Student Research

Category: Bioethics & Medical Education / Oral Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Background: Training medical students in clinical research early in their education has proven to be beneficial. Here, in this updated work, we surveyed participants of a research elective course (first- and second-year medical students) on the importance of medical school research and implementation of it into their medical student curriculum. We hypothesize that providing a more robust research curriculum to medical students can advance their future careers as an academic physician.

Methods: An anonymous 17-question survey with 5-point Likert-scale was sent to medical students at a single medical institution to gauge responses to their perceived quality of research training they have received in their medical education. Over a one-year period, it was sent to respondents of a research elective course taught at a single medical institution three times.

Results: A survey respondent rate of 100% (n=46) from our institution was collected. More than half of the respondents have never conducted any research and only 5.6% of respondents are currently actively conducting any research during their medical education. All respondents (100%) agreed or strongly agreed that it was important for medical students to be educated on clinical research. More current first-year medical students (93%) than current second-year medical students (85%) emphasized that practicing physicians should have knowledge on how to conduct clinical research. After starting the course, 75% of respondents said they have been able to start working on research projects at our institution within 4 weeks. The majority of respondents (94%) agreed or strongly agreed that they have not been receiving adequate training in conducting clinical research. 98% of respondents agreed or strongly agreed that medical students should undergo more training on clinical research than what is currently provided, and that opportunities should be more readily available to medical students.

Conclusion: Although medical students are strongly interested in conducting clinical research, there is a lack of education on how to conduct and be involved in clinical research. Increased education on research should be implemented into the medical school curriculum across the United States.

Learning Objectives:

- Describe the current state of the curriculum on research at medical schools
- Demonstrate a need for a more robust research curriculum in medical schools for medical students

Cardio-embolic ST Elevation Myocardial Infarction

Category: Medicine & Medical Specialties / Oral Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: Coronary artery embolism (CAE) accounts for 3% of cases of myocardial infarction. The origin of these emboli could be direct, iatrogenic, or paradoxical. Atrial fibrillation is the most common cause of CAE. Data from non-randomized studies show that patients with ST-elevation myocardial infarction (STEMI) secondary to CAE have worse outcomes in terms of all-cause mortality, cardiac death and carry the risk of distal migration of occlusive thrombus during percutaneous coronary intervention.
Case Presentation: A 67-year-old female presented with acute onset retrosternal chest discomfort which started 3 hours prior to presentation at rest. She was a non-smoker and had no significant past medical history. Cardiopulmonary examination was unremarkable with blood pressure and heart rate of 136/86 mmHg and 80 bpm respectively. ECG showed sinus rhythm with 2-3 mm ST-segment elevation in inferior and lateral leads with reciprocal changes. Emergent coronary angiography revealed a right dominant system with acute thrombotic occlusions of distal right posterior descending and right posterolateral ventricular arteries. There were no signs of atherosclerotic disease in the proximal and mid-right coronary artery or left epicardial vessels.

Management: Patient underwent successful balloon angioplasty of both vessels with restoration of TIMI-3 flow without evidence of dissection or perforation. No stent was deployed, but with residual thrombus burden across both occluded vessels, she was initiated on intravenous eptifibatide, maintained for 18 hours. Left ventricular function was preserved at 60% with mild hypokinesis of the diaphragmatic and posterior basal segments on ventriculography. Incidentally, new onset paroxysmal atrial fibrillation was noted during the procedure.

Angiographic findings of multisite occlusions, with evidence of thrombosis in the absence of atherosclerosis, fulfilled two major National Cerebral and Cardiovascular center criteria for definitive diagnosis of CAE. With < 25% luminal stenosis in other coronary arteries and coexistence of atrial fibrillation, two minor criteria were also fulfilled. A formal follow-up echocardiogram showed preserved left ventricle function with interval resolution of regional wall motion abnormalities, and no significant valvular heart disease. Long-term oral anticoagulation (OAC) with apixaban was initiated in addition to clopidogrel (later switched to aspirin 81 mg daily on 30-day follow-up), statin, and beta-blocker, without ACE inhibitor due to borderline blood pressure readings.

Discussion: Evaluation of non-atherosclerotic causes of acute coronary syndrome (ACS) is crucial to prevent morbidity associated with the underlying cause. In suspected cases of CAE, where diagnosis of occult atrial arrhythmias remains uncertain, a transesophageal echocardiogram and long-term mobile telemetry may be warranted for secondary prevention and consideration of long-term OAC. While immediate management is like that of atherosclerotic ACS, heavy thrombus burden and distal thrombus in CAE may warrant aspiration thrombectomy, anticoagulation, or antiplatelet infusion.

Learning Objectives:

- This case presentation highlights the significance of the evaluation of patients for uncommon causes of ACS.
- This presentation illustrates the utility of the National Cerebral and Cardiovascular center criteria for definitive diagnosis of Coronary Artery Embolism.

References:

1. Shibata T, Kawakami S, Noguchi T, Tanaka T, Asaumi Y, Kanaya T, Nagai T, Nakao K, Fujino M, Nagatsuka K, Ishibashi-Ueda H, Nishimura K, Miyamoto Y, Kusano K, Anzai T, Goto Y, Ogawa H, Yasuda S. Prevalence, Clinical Features, and Prognosis of Acute Myocardial Infarction Attributable to Coronary Artery Embolism. Circulation. 2015 Jul 28;132(4):241-50. doi: 10.1161/CIRCULATIONAHA.114.015134. Epub 2015 Jun 25. PMID: 26216084.
2. Popovic B, Agrinier N, Bouchahda N, Pinelli S, Maigrat CH, Metzdorf PA, Selton Suty C, Juillière Y, Camenzind E. Coronary Embolism Among ST-Segment-Elevation Myocardial Infarction Patients: Mechanisms and Management. Circ Cardiovasc Interv. 2018 Jan;11(1):e005587. doi: 10.1161/CIRCINTERVENTIONS.117.005587. PMID: 29311288.

Percutaneous Coronary Intervention with Dual Anti-platelet Therapy in a Patient with Subdural Hematoma; A Novel Approach

Category: Medicine & Medical Specialties / Oral Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: Subdural hematoma is a collection of blood under the dura mater of the brain [1,2,3]. Middle meningeal artery embolization has become the mainstay for stabilization of small or refractory subdural hematoma [4]. Management of subdural hematoma in settings requiring the use of anti-platelet therapy, has

posed a clinical dilemma because of associated bleed expansion [4]. We present the first case of successful percutaneous coronary intervention with dual anti-platelet therapy use in a patient with subdural hematoma.

Case Presentation: A 68-year-old male with a significant history of coronary artery disease status post two recent drug-eluting stent placement, presented with complaint of recurrent heavy-pressure type mid-sternal chest pain of a day duration. His dual anti-platelet therapy was recently discontinued following findings of subdural hematoma on brain imaging. Vital signs were within normal limits and there were no abnormal physical examination findings.

An acute coronary syndrome was suspected; however, pulmonary embolism, aortic dissection, and tension pneumothorax could not be excluded at the time of presentation.

The patient had serial electrocardiograms showing a normal sinus rhythm with poor R wave progression and nonspecific ST changes. Serial Troponin T were monitored over 24 hours and showed an upward trend. A Computed tomography scan of the head without contrast showed a small right subdural hematoma appearing to be subacute to chronic with no significant mass effect. Chest x-ray was negative for tension pneumothorax, and Computed tomography angiogram of the chest was negative for a pulmonary embolism and aortic dissection.

Final/Working Diagnosis: A diagnosis of Acute coronary syndrome in a patient with recent spontaneous subdural hematoma was made based on findings from history and investigations.

Management/Outcome: Bilateral middle meningeal artery embolization was done. Three days post-surgery, the patient had a left heart catheterization with findings of severe in-stent restenosis to the proximal mid-left anterior descending artery. This was successfully re-stented and he was commenced on dual anti-platelet therapy. Imaging studies to the brain one-week post procedure showed a stable right subdural hematoma.

Follow-up: Patient was seen in the outpatient clinic at one, three- and six-months post procedure with findings of complete resolution of subdural hematoma in the later.

Learning Objectives:

- Implement a new strategy in the management of subdural hematoma in patient requiring subsequent anti-platelet therapy.
- Discuss the pathophysiological basis for the use of middle meningeal artery embolization for stabilization of a subdural hematoma.
- Demonstrate the role of a multidisciplinary team in patient management.

References:

1. Pierre L, Kondamudi NP. Subdural Hematoma. [Updated 2021 Nov 7]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK532970/
2. Traynelis V. C. (1991). Chronic subdural hematoma in the elderly. Clinics in geriatric medicine, 7(3), 583–598.
3. Ellis G. L. (1990). Subdural hematoma in the elderly. Emergency medicine clinics of North America, 8(2), 281–294.
4. Carnevale MD, J., Kocharian MD, G., Goldberg, MD, J., Ramos, MD, PhD, A., Schwarz, MD;, J., & Knopman, MD, J. (2021). Middle Meningeal Artery Embolization for Subdural Hematoma: What We've Learned, What We Need to Know. Endovascular Today, 20(2). Retrieved 6 February 2022.

RECURRENT OGILVIE'S SYNDROME POST CERVICAL SPINAL FUSION

Category: Medicine & Medical Specialties / Oral Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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INTRODUCTION: Pathophysiology of Ogilvie's syndrome is based on a “non-functioning”, imbalanced enteric nervous system, causing adynamic colonic dilation and proximal obstruction. It has an incidence of up to 7% in patients undergoing surgery, causing a mortality rate of up to 46%. About 0.1% of people develop this condition after major cardiac and hip surgeries. Ogilvie syndrome following lumbar spinal instrumentation has been documented and is thought to be related to S2-S4 autonomic nervous system imbalance, however not much is known in the context of cervical spinal instrumentation. Colonic diameters more than 14 cm are associated with serious complications like perforation and intestinal ischemia; therefore this is the major reason that intervention is often attempted. We present a patient who developed recurrent Ogilvie syndrome after cervical spinal fusion who was successfully managed conservatively.

CASE REPORT: A 74-year-old male with a recent surgical history of cervical spinal fusion one month prior to presentation, presented with a 3-day history of worsening abdominal distension, vomiting, and constipation. The patient had no prior history of prior abdominal surgery or lumbar spinal surgery. On presentation, he was afebrile with unremarkable vitals. General examination and cardiopulmonary examination showed a poorly nourished male with coarse breath sounds and global muscular atrophy and weakness. Abdominal examination revealed gross distention, with tympanitic resonance, and was non-tender; decreased bowel sounds were noted. Investigation showed he was hypokalemic (3.1mmol/L), otherwise, the complete blood count and renal functions were unremarkable. Computed tomography of the abdomen showed marked air-fluid distension in the colon without any obstructive lesion. The patient was kept nil per os, started on total parenteral nutrition, and electrolytes were replenished. A nasogastric tube and a rectal tube were placed for decompression. Neostigmine was administered with resultant improvement in symptoms. The patient was discharged on osmotic laxatives to avoid recurrence. A few months later, he presented with similar complaints. Examination revealed a grossly distended abdomen with sluggish bowel sounds. Repeat abdominal imaging showed features of recurrent colonic pseudo-obstruction. He was managed conservatively with neostigmine with improvement in symptoms.

DISCUSSION: It is crucial to recognize and manage Ogilvie's syndrome appropriately, especially in chronically ill patients. We report here that many patients can be treated conservatively. The treatment should be focused on correcting electrolyte imbalances, reducing narcotics, and neostigmine, and providing a nasogastric or rectal tube for decompression, and ambulation. After cervical spine surgery, this syndrome should be considered as a diagnosis specifically if confirmed on CT along with patient symptoms. According to the literature review of 30 patients who underwent spinal surgeries, 20% of post-surgical patients had resolution with conservative treatment, 40% with neostigmine, and 30% required surgical intervention.

Learning Objectives:

- Management of recurrent Ogilvie's syndrome in post-surgical patients.

Drug-induced Euglycemic Diabetic Ketoacidosis in a Patient with Systemic Sarcoidosis

Category: Medicine & Medical Specialties / Oral Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: Sarcoidosis is a systemic disorder with a wide range of manifestations. Due to systemic involvement, systemic steroids are most commonly used to improve symptoms and mortality, however, steroids have a significant side-effect profile. We present a case of euglycemic diabetic ketoacidosis in a patient with sarcoidosis treated with systemic steroids.

Case Presentation: History: A 78-year-old female with a medical history of type II non-insulin dependent diabetes, and sarcoidosis with pulmonary and bilateral ocular involvement, presented with a complaint of abdominal pain and vomiting. Her medications included empagliflozin, metformin and sitagliptin for diabetes. The patient was recently initiated on high dose prednisone for the treatment of pulmonary and ocular sarcoidosis flare.

Physical exam: Unremarkable including abdominal exam

Lab tests: Sodium 130 mmol/L, potassium 4.4mmol/L, bicarbonate 13mmol/L, anion gap 22, BUN 53mg/dL, creatinine 1.1 mg/dL and glucose 232 mg/dL.

Further workup revealed high beta-hydroxybutyrate 9.29 mmol/L, urinary ketones 80 mg/dl, and normal lactate.

Imaging: CT chest showed prominent bilateral perihilar regions and calcifications consistent with worsening of sarcoidosis.

Final Diagnosis: Drug-induced Euglycemic Diabetic Ketoacidosis (EuDKA).

Management: DKA protocol was initiated. Prednisone and oral diabetic agents were discontinued, however, in two days she experienced worsening ocular symptoms, suspicious of ocular sarcoidosis flare. Steroids were reinitiated and glycemic control was tightened with insulin. Ocular symptoms were improved with the reintroduction of steroids.

To our knowledge, this is the first case to be reported as EuDKA in the context of sarcoidosis who was taking systemic steroids. Although the use of SGLT2 inhibitors could have contributed to the development of EuDKA, the temporal association with initiation of steroid therapy, could not be dismissed.

Outcome/Follow-up: Our patient highlights the therapeutic dilemma in the management of systemic sarcoidosis when patient developed an adverse event related to steroids. Ideally, short-term insulin therapy with discontinuation of the offending agent would be the cornerstone of management, however, this strategy added another layer of clinical complexity by worsening the sarcoidosis flare. Patient was eventually discharged on insulin with the lowest tolerable dose of steroid with close outpatient follow-up.

Learning Objectives:

- This case reminds us the importance of use of immunosuppressive agents early in the disease course of systemic sarcoidosis especially in patients with diabetes mellitus in which adding steroids will complicate management.

Session 6B - Medicine & Medical Specialties; Emergency & Disaster Medicine; and Women's & Children's Health

Atypical Takotsubo Cardiomyopathy Precipitated by Gastrointestinal Bleeding: Review of Pathophysiology

Category: Medicine & Medical Specialties / Oral Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: Takotsubo cardiomyopathy is a transient dyskinesia, hypokinesia or akinesia of the left ventricle with apical ballooning in the absence of obstructive coronary artery disease with electrocardiogram changes and elevation of cardiac enzymes [1]. Although its incidence is on the rise as clinicians are more aware of the disease entity, it poses a diagnostic dilemma as it presents as a great mimicker [2]. Variants with apical sparing and mid ventricular akinesis have also been described, thus referred to as an atypical form [2]. The pathophysiology is unclear, but it is believed to be stress-induced with a varying degree of triggers [3]. We present the first case of atypical takotsubo cardiomyopathy precipitated by gastrointestinal hemorrhage.

Case Presentation: A 73-year-old female presented with complaint of chest pain, palpitation, and shortness of breath. She was hospitalized 48 hours prior for gastrointestinal bleeding necessitating blood transfusion. On physical examination, patient was tachycardic, with normal heart sounds.

An acute coronary syndrome was suspected; however, pneumonia, pulmonary embolism, and aortic dissection, could not be excluded at the time of presentation.

Electrocardiogram showed ST elevation in the anterior limb leads with elevated troponin at 0.08 ng/mL. ProBNP was also elevated at 37,000 pg/mL. Chest X-ray revealed pulmonary edema. Coronary angiography showed moderate non-obstructive coronary artery stenosis with an ejection fraction of 25-30%. An echocardiogram revealed severe hypokinesis of all the mid left ventricular segments, hypokinesia of the base and apex of the left ventricle with an ejection fraction of 40%. Also, computed tomography angiography was negative for pulmonary embolism and aortic dissection.

Final/Working Diagnosis: A diagnosis of Acute heart failure secondary to atypical takotsubo cardiomyopathy precipitated by a recent gastrointestinal bleed was made.

Management/Outcome: The patient was started on dopamine infusion for cardiogenic shock which developed few hours following hospitalization. She was monitored closely in the medical intensive care unit and eventually weaned off pressor support. Goal directed medical therapy for heart failure with intravenous furosemide, losartan and metoprolol was also instituted. Patient improved clinically and was subsequently discharged home.

Follow-up: She was seen in outpatient service, one week and three months following discharge and was stable.

Learning Objectives:

- Identify massive gastrointestinal hemorrhage as a precipitant for the development of takotsubo cardiomyopathy.
- Describe the diagnostic criteria for takotsubo cardiomyopathy as well as highlighting the echocardiographic findings of the atypical variant.
- Discuss the pathophysiology of takotsubo cardiomyopathy

References:

1. Khalid N, Ahmad S, Shlofmitz E, et.al. Pathophysiology of Takotsubo Syndrome. StatPearls Publishing; 2022 Jan. https://www.ncbi.nlm.nih.gov/books/NBK538160/.
2. Loong C, Firdaus M, Said M, et.al. Atypical Presentation of Takotsubo Cardiomyopathy: Stroke as a Predisposing Factor. Medeni Med J. 2020; 35:266-270.
3. Lyon A, Citro R, Schneider B, et.al. Pathophysiology of Takotsubo Syndrome: JACC State-of-the-Art Review. J Am Coll Cardiol. 2021; 77:902-921.

Capnocytophaga: A Rare Case of Empyema

Category: Medicine & Medical Specialties / Oral Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: Capnocytophaga is commonly found in normal human oral flora, occasionally causing periodontal disease. Few cases of capnocytophaga empyema have been reported, typically in immunocompromised patients. There are no known established risk factors for capnocytophaga empyema due to its rare presentation. Early identification through culture is important as infection can lead to severe respiratory distress, septicemia, and shock, and carries a high mortality rate if left untreated. We present a case of a 56-year-old male, with no previous medical history who presented with shortness of breath and was found to have capnocytophaga empyema.

Case Presentation: A 56-year-old Caucasian male with no known medical history aside from tobacco and alcohol dependence presented to the emergency department with cough, worsening shortness of breath and foul smelling sputum. Vitals showed heart rate of 138 bpm and oxygen saturation of 87% on noninvasive mechanical ventilation. Physical exam revealed poor oral dentition, bilateral lung crackles, severe respiratory distress, and jaundice. Labs showed leukocytosis, lactic acidosis, and elevated procalcitonin. Computed Tomography (CT) of the abdomen and pelvis revealed complex right pleural effusion, bilateral lower lobe and right middle lobe consolidations, and partially enhancing lesion in the right hepatic lobe. CT angiography of the chest confirmed pneumonia and a right hydropneumothorax possibly representing empyema. The patient was intubated for worsening respiratory status and started on empiric vancomycin, ceftriaxone and metronidazole for community acquired pneumonia complicated by possible empyema. A thoracostomy tube was placed and drained purulent, foul-smelling fluid. Pleural fluid analysis revealed an exudative process with cultures showing capnocytophaga species. Antibiotic therapy was deescalated to cefepime and metronidazole as identification and sensitivities were delayed due to innate microbiologic characteristics of the organism.

Final Diagnosis: Capnocytophaga empyema

Management/Outcome and Follow-up: The patient eventually improved and was subsequently extubated with removal of the chest tube. The patient was discharged with cefuroxime 500 mg orally twice daily for four weeks. The patient was seen in the outpatient setting with no complications at follow-up.

Learning Objectives:

- Discuss the importance of identifying and treating capnocytophaga empyema as it can lead to severe respiratory distress, septicemia, shock and even death.
- Capnocytophaga empyema is a rare presentation, especially in immunocompetent patients.
- There have only been a few cases of capnocytophaga empyema reported and most were found in immunocompromised patients.

References:

1. Yoshii T, Furudoi S, Kohjitani A, Kuwamura K, Komori T. Subdural empyema after tooth extraction in which Capnocytophaga species was isolated. Scand J Infect Dis. 2000;32(6):704-5. doi: 10.1080/003655400459702. PMID: 11200389.
2. Lion C, Escande F, Burdin JC. Capnocytophaga canimorsus infections in human: review of the literature and cases report. Eur J Epidemiol. 1996 Oct;12(5):521-33. doi: 10.1007/BF00144007. PMID: 8905316.
3. Li A, Tambyah P, Chan D, Leong KK. Capnocytophaga sputigena empyema. J Clin Microbiol. 2013 Aug;51(8):2772-4. doi: 10.1128/JCM.00884-13. Epub 2013 May 22. PMID: 23698526; PMCID: PMC3719629.
4. Basco SA, Steele GM, Henao-Martínez AF, Franco-Paredes C, Chastain DB. Unexpected etiology of a pleural empyema in a patient with chronic lymphocytic leukemia (CLL): Capnocytophaga ochracea. IDCases. 2020 Mar 20;20:e00747. doi: 10.1016/j.idcr.2020.e00747. PMID: 32300526; PMCID: PMC7152719.
5. Guy W. Chambers, T. Ulf Westblom, Pleural Infection Caused by Capnocytophaga canimorsus, Formerly CDC Group DF-2, Clinical Infectious Diseases, Volume 15, Issue 2, August 1992, Pages 325–326, https://doi.org/10.1093/clinids/15.2.325
6. Bonatti H, Rossboth DW, Nachbaur D, Fille M, Aspöck C, Hend I, Hourmont K, White L, Malnick H, Allerberger FJ. A series of infections due to Capnocytophaga spp in immunosuppressed and immunocompetent patients. Clin Microbiol Infect. 2003 May;9(5):380-7. doi: 10.1046/j.1469-0691.2003.00538.x. PMID: 12848750.

Atypical HSV Meningoencephalitis: Bayesian Reasoning in The Case of Normal CSF

Category: Medicine & Medical Specialties / Oral Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: Left untreated, the mortality rate of herpes simplex virus (HSV) encephalitis exceeds 70%. This emphasizes the importance of early initiation of therapy. However, cases of atypical meningoencephalitis, where

lack of pleocytosis in cerebrospinal fluid (CSF) are observed at increasing incidence, placing further importance on Bayesian reasoning in clinical diagnosis.

Case: Patient is a 50-year-old Caucasian female who was previously treated three weeks prior for SARS-CoV2 pneumonia complicated by methicillin-resistant staphylococcus aureus (MRSA) bacteremia and received a prolonged course of high dose corticosteroids, remdesivir, and barcitinib while requiring invasive mechanical ventilation. She was readmitted three weeks later for encephalopathy with seizure-like movements, tachycardia, and leukocytosis. Magnetic resonance imaging of the brain revealed right temporal enhancement. Lumbar puncture revealed lack of pleocytosis in CSF and patient was empirically started on intravenous (IV) acyclovir. Eventually, HSV-1 polymerase chain reaction (PCR) came back positive with varicella zoster virus PCR was negative.

Final/Working Diagnosis: Atypical HSV Meningoencephalitis

Management, Outcome, and Follow-up: Patient began to improve clinically with no complications and completed two weeks of IV acyclovir.

Learning Objectives:

- Discuss the atypical findings that may be present in HSV Encephalitis
- Demonstrate the utilization of Bayesian reasoning in clinical diagnosis

References:

1. Granerod J, Crowcroft NS. The epidemiology of acute encephalitis. Neuropsychol Rehabil. 2007;17(4-5):406-428.
2. Bewersdorf JP, Koedel U, Patzig M, et al. Challenges in HSV encephalitis: normocellular CSF, unremarkable CCT, and atypical MRI findings. Infection. 2019;47(2):267-273.
3. Rice CM, Yadav S, Boyanton B, Subedi P, Band J. Clinical problem-solving. A creeping suspicion. N Engl J Med. 2014;371(1):68-73.
4. Gnann JW Jr, Whitley RJ. Herpes Simplex Encephalitis: an Update. Curr Infect Dis Rep. 2017 Mar;19(3):13

Acute Cardiac Findings After an Episode of Shortness of Breath: An Unusual Presentation

Category: Emergency & Disaster Medicine / Oral Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: Dyspnea is a common symptom that affects many patients and is frequently associated with pulmonary processes. However, dyspnea may be a manifestation secondary to a cardiac or hematologic cause. By recognizing what is causing shortness of breath, prompt emergency medical care can be provided.

Case Presentation: I present a case of a 77-year-old male with a past medical history of COPD with CPAP at night, congestive heart failure, angina on ranolazine, bradycardia on theophylline, DVT, and PE, who presents with

shortness of breath. His symptoms woke him this morning and continued. He endorses chest pain, worse with deep inspiration.

Upon arrival, his temperature was 97.8 F, pulse 42, respiratory rate 22, oxygen saturation of 96% on 3L nasal cannula, and a blood pressure of 102/52. He did not appear to be in distress. Physical exam was notable for bradycardia and clear lungs.

His labs and chest x-ray were unremarkable. EKG demonstrated a significantly prolonged PR interval with a rate of 42, whereas past EKGs demonstrated a heart rate between 80-110 beats per minute with normal PR intervals.

The patient endorsed that he has a history of bradycardia and takes theophylline. Pharmacy was consulted and they confirmed that theophylline can be used off-label to improve bradycardia. However, research shows that when compared to rate-response pacemaker vs theophylline, patients with a pacemaker had a significantly lower incidence of syncope.1 Additionally, ranolazine has been linked to bradycardia, but review of the 5 major ranolazine trials, demonstrated that less than 2% of patients experienced this side effect. 2

Given that the patient continued to be bradycardic with prolonged PR intervals, a repeat EKG was completed, demonstrating a low junctional rhythm with a Mobitz type two heart block. He then went into complete heart block with worsening PR intervals. Cardiology was consulted and recommended that the patient be admitted for placement of a temporary pacemaker for symptomatic bradycardia and complete heart block.

The patient was admitted, received a pacemaker, and appropriately paced at 92 beats per minute. He will follow up with cardiology in 2 weeks and sooner if needed.

Learning Objectives:

- Illustrates the prompt and accurate diagnosis of bradycardia and heart block causing shortness of breath, allowing the patient to receive a pacemaker in a timely fashion.
- The importance of knowing off-label use and side effects of medication, and the benefits of inter-professional management in patients.

References:

1. Homoud, Munther K. “Sinus Node Dysfunction: Treatment.” Up To Date, 28 June 2021, https://www-uptodate-com.rosalindfranklin.idm.oclc.org/contents/sinus-node-dysfunction-treatment?search=theophylline+bradycardia&source=search_result&selectedTitle=1~150&usage_type=default&display_rank=1.
2. Zaidi, Syed Arsalan Akhter, et al. “Ranolazine Induced Bradycardia, Renal Failure, and Hyperkalemia: A Brash Syndrome Variant.” Case Reports in Medicine, Hindawi, 31 Dec. 2019, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6955118/.

Adrenal Insufficiency – a Rare Adverse Effect of Bexarotene

Category: Medicine & Medical Specialties / Oral Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: Bexarotene is a retinoid, currently approved for treating cutaneous T-cell lymphoma. The most common side effects of bexarotene include skin reactions (rash and itchiness), hypertriglyceridemia, and central hypothyroidism. This case report investigates an occurrence of adrenal insufficiency which is one of the rare side effects.

Case: A 39-year-old female was admitted for three days of worsening lethargy, drowsiness, confusion, and changes in her speech. She had a medical history of cutaneous T-cell lymphoma diagnosed a year ago, hypertension, hypothyroidism, and a recent 10-day hospitalization for sepsis secondary to non-hemolytic streptococci bacteremia. Her lymphoma was being treated with bexarotene for 12 months prior. Of note, her bexarotene was stopped during her prior hospitalization and her current symptoms started after she resumed taking it.

On presentation, she was hypothermic (T = 93°F), tachypneic (RR = 20 bpm), and hypertensive (SBPs 150s to 170s and DBPs 70s to 80s). Heart rate was in the 70s; SpO2 = 97 % on room air. On exam, she did not converse and was not alert. She was not oriented to person, place, time, or situation. There were no neurological focal deficits. Labs were notable for elevated TSH (8.9 mlU/ml), positive ACTH assay (ACTH of 30 pg/ml), low cortisol (baseline cortisol 13.8 ug/dL and cortisol of 13.7 ug/dL and 10.6 ug/dL at 30 and 60 respectively), low DHEA-S (<20 ng/dL), normal FSH (9.4 mlU/ml), normal LH (1.2 mlU/ml) and low prolactin (4.5 ng/mL). MRI brain showed 4 mm microadenoma in the pituitary gland.

Diagnosis: She was diagnosed with adrenal insufficiency and poorly controlled hypothyroidism. She was started on IV hydrocortisone 100 mg tapered down over seven days. She was discharged with hydrocortisone 10 mg twice daily for adrenal insufficiency and thyroxine 100 mcg once daily (increased from 50 mcg). She was instructed to stop bexarotene indefinitely. She was also instructed to follow up with her oncologist for alternative therapy for her lymphoma.

Outcome: Clinicians should have a high index of suspicion for adrenal failure in patients under bexarotene therapy. Cortisol levels should be monitored, especially in those patients who develop suggestive symptoms.

Learning Objectives:

- Discuss adrenal insufficiency as a rare side effect of Bexarotene

Double trouble – An Unusual Presentation of Liver Abscess and Acute Interstitial Nephritis Progressing to End-stage Renal Disease from Streptococcus Intermedius Bacteremia in an Immunocompetent Patient

Category: Medicine & Medical Specialties / Oral Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: We report a case of an immunocompetent patient, who developed Streptococcus intermedius bacteremia, multiple liver abscesses, and acute interstitial nephritis (AIN), which progressed to end-stage renal disease (ESRD) requiring hemodialysis.

Case: A 78-year-old female with history of CAD, hypertension, and asthma presented to the ED with fatigue, abdominal pain, diarrhea, and decreased urine output for three days. She recently returned from Southern France where she had overexerted herself in the heat. She was ill-appearing. Vital signs and exam were normal.

Significant labs/imaging: Na = 125 mmol/L, CO2 = 14 mmol/L, BUN = 79 mg/dL, Cr = 8.3 mg/dL, WBC = 17.40 10^9/L, HGB = 10.6 g/dL, Alk Phos = 217 IU/L, AST = 128 IU/L, ALT 101 = IU/L, bilirubin = 0.5 mg/dL. CT abdomen/pelvis revealed sigmoid wall-thickening and liver abscesses.

She became anuric and was started on emergent hemodialysis. Liver abscess was drained. Cultures of blood and liver abscess fluid grew streptococcus intermedius. Her ECHO was negative for vegetations. Renal biopsy revealed acute AIN. Of note, she had a normal colonoscopy 2 years ago.

Final Diagnosis: She was started on IV ceftriaxone, metronidazole, and steroids. Other extensive infectious work up, hepatitis panel and autoimmune panel were negative. She remained on hemodialysis without any renal recovery. She clinically improved and was eventually discharged on two weeks of oral cefuroxime 100 mg daily and metronidazole 500 mg TID. She continued dialysis and followed up with infectious disease. An outpatient colonoscopy to rule out colon cancer was also scheduled.

Outcome: Streptococcus intermedius (of the Streptococcus anginosus group) is an infrequent pathogen, but part of normal flora of the oropharynx, genitourinary and gastrointestinal tracts with a propensity to cause suppurative infection. Strep intermedius bacteremia should raise suspicion for colon cancer. Infection-related AIN is managed by treating the underlying infection; the role of steroids is unclear. High metabolic demand and decreased blood supply make the tubulointerstitium more susceptible for injury. This case posed a challenge given the uncommon etiology and rapid progression of renal failure. Infection-associated AIN is underdiagnosed; this patient's progression to ESRD despite treatment highlights the importance of high index of suspicion.

Learning Objectives:

- Understand the risk of rapid progression of acute interstitial nephritis (AIN) to end-stage renal disease (ESRD) caused by strep intermedius bacteremia.
- Differentiate management of Infection-related acute interstitial nephritis (AIN), versus medication-induced AIN.

References:

1. https://kidney360.asnjournals.org/content/2/6/1051
2. https://journalmc.org/index.php/JMC/article/view/2326/1686
3. https://pubmed.ncbi.nlm.nih.gov/28491853/
4. https://academic.oup.com/omcr/article/2016/1/1/2362336
5. https://www.statpearls.com/ArticleLibrary/viewarticle/30673

Preoperative Evaluation of Anorectal Malformations Using Augmented-Pressure Distal Colostogram

Category: Women's & Children's Health / Oral Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: Anal atresia, apparent at birth, is temporized by perinatal diverting colostomy. Definitive surgical repair approach is determined by distance from the blind-ending rectal pouch to the anal dimple and presence/absence of a fistula. It is imperative that a preoperative diagnostic procedure, an augmented-pressure distal colostogram, be performed with meticulous attention to technique to inform the surgeon's approach decision. We present a case that demonstrates how to perform the augmented-pressure distal colostogram correctly to avoid pitfalls that could prolong surgery time, recovery time, or negatively affect long term outcome.

Case Presentation: History/Physical: A 50-day-old male with anal atresia without clinically apparent rectourethral/rectoperineal fistula was treated with diverting colostomy shortly after birth. Surgeon consulted radiologist for surgical planning assistance.

Differential Diagnosis: Anal atresia with high vs. low positioned rectal pouch with/without rectal fistula.

Results: Definitive diagnostic exam is an augmented-pressure distal colostogram. It demonstrated a low rectal pouch inferior to sacral tip and small caliber rectoperineal fistula.

Discussion: Anal atresia treatment begins with diverting colostomy with mucous fistula to the rectal pouch shortly after birth as a temporary measure until definitive surgical repair at 4-6 weeks old. The rectal pouch distal end position relative to the sacral tip and the presence/absence of a fistula determine definitive surgical approach: either posterior approach sagittal anorectoplasty (PSA) alone or PSA plus anterior approach via laparoscopy. Radial hydrostatic pressure must be provided to the pouch for proper distention to accurately determine the rectal pouch position relative to the anal dimple and whether a fistula is present. Meticulous detail to balloon inflation inside the mucous fistula, true lateral positioning of the infant with the legs flexed and adequate filling of the rectal pouch are required.

Diagnosis: A diagnostic quality augmented-pressure distal colostogram assisted the pediatric surgeon in determining that a PSA alone with rectoperineal fistula takedown was the optimal surgical approach to correct the rectoperineal fistula and the anal atresia. VCUG was performed prior to colostomy takedown.

Conclusion: Consultation between the surgeon and the radiologist to assure performance of a diagnostic quality augmented-pressure distal colostogram allows individualized surgical planning in each infant with anal atresia.

Learning Objectives:

- Recognize what constitutes a diagnostic quality augmented-pressure distal colostogram and how it benefits infants with anal atresia.

References:

1. Levitt MA, Peña A. Anorectal Malformations. Orphanet Journal of Rare Diseases. 2007 Dec;2(1):1-3.
2. Cho S, Moore SP, Fangman T. One Hundred Three Consecutive Patients with Anorectal Malformations and Their Associated Anomalies. Archives of Pediatrics & Adolescent Medicine. 2001 May 1;155(5):587-91.
3. Singh M, Mehra K. Imperforate Anus. InStatPearls [Internet] 2021 Aug 30. StatPearls Publishing.
4. Kraus SJ, Levitt MA, Peña A. Augmented-Pressure Distal Colostogram: The Most Important Diagnostic Tool for Planning Definitive Surgical Repair of Anorectal Malformations in Boys. Pediatric Radiology. 2018 Feb;48(2):258-69.

Session 6C - Medicine & Medical Specialties; Public Health & Environmental Medicine; Quality Health Care, Patient Safety & Best Practices; and Surgery & Surgical Specialties

When is Sinus Bradycardia Pathologic?

Category: Medicine & Medical Specialties / Oral Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: Approximately 40% of adults will experience an episode of syncope in their lifetime. Less common etiologies of syncope, such as a myocardial infarction (MI), should be considered when syncope is accompanied by bradycardia and hypotension. The existing literature consists of case reports describing prolonged sinus arrest due to obstruction of the sinus nodal artery (SNA) following a percutaneous coronary intervention of the Right Coronary Artery (RCA). To our knowledge, no cases have been published describing sinus nodal (SN) ischemia presenting as isolated syncope with preserved SN pacing. This case reinforces foundational concepts of coronary artery anatomy, pacing rates, and sinus bradycardia, in addition to raising questions about when sinus bradycardia should be suspected to be pathologic.

Case Presentation: A 70 y.o. male presented to the emergency department with a one-day history of multiple syncopal episodes. The patient denied chest pain, shortness of breath, or a prior history of syncope. Syncope workup revealed sinus bradycardia with a rate in the 30s and hypotension with a BP of 76/55. CXR showed no acute cardiopulmonary processes. CT Brain without contrast was negative for acute intracranial pathology. Due to the patient's abnormal sinus heart rate, a repeat EKG and cardiac enzymes were ordered, revealing ST-T wave abnormalities consistent with an inferior infarct and upward trending HS Troponin I. Emergent coronary angiography revealed a proximal RCA to mid-RCA lesion with 100% stenosis. Export thrombectomy and RCA stenting were successfully performed. Upon discharge, the patient’s hypotension had resolved, and he was in junctional bradycardia with a pulse in the 60s. He was scheduled for cardiology follow up.

Conclusion: This patient’s sinus node retained its pacemaking capabilities at a rate of 30 beats-per-minute upon presentation. Acute disturbances of SN function caused by myocardial infarction is driven by both ischemia and neural reflex effects from mechanical or chemoreceptors in the ventricular wall. This case raises the question of why this patient’s pacemaking system had a delay in switching from sinus rhythm to atrioventricular (AV) pacing. Possible explanations include chronic ischemia with the development of collaterals that sustained a suboptimal but functional sinus pace rate.

Learning Objectives:

- This case serves as a review of coronary artery anatomy, the differential diagnosis for syncope, SA and AV node pacing rates, and clinical manifestations of SN dysfunction. In addition to the review of these important foundational concepts, physicians and medical learners should take away the importance of interrogating the root cause of symptomatic sinus bradycardia.

References:

1. Sathnur N, Ebin E, Benditt DG. Sinus Node Dysfunction. Card Electrophysiol Clin. 2021 Dec;13(4):641-659. doi: 10.1016/j.ccep.2021.06.006. Epub 2021 Sep 23. PMID: 34689892.

2. Shimizu R, A. R., Ishikawa J, Harada K. (2021). Prolonged sinus arrest due to the obstruction of a sinus node branch after percutaneous coronary intervention of the right coronary artery. Journal of Cardiology Cases, 25(5), 319-322. doi:10.1016/j.jccase.2021.11.014.

Bean Syndrome aka BRBNS

Category: Medicine & Medical Specialties / Oral Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: Blue Rubber Bleb Nevus Syndrome (BRBNS) also known as Bean Syndrome is a rare disease that is characterized by the appearance of blue compressible venous malformations at cutaneous sites. Extracutaneous sites include the gastrointestinal tract, particularly the small bowel and colon, which present as acute or chronic bleeding. Endoscopic evaluation reveals bluish intestinal nodules with normal mucosal walls. Diagnosis of BRBNS is made clinically by the pathognomonic cutaneous lesions, the endoscopic appearance of gastrointestinal(GI) lesions, and histology showing groups of dilated capillary structures lined by a thin layer of the epidermis.

BRBNS with primary GI tract involvement without cutaneous manifestations, is extremely rare with very few cases reported. A retrospective analysis of 120 BRBNS cases reported manifestation of the disease without skin involvement in 7 % of cases. We present one such case of BRBNS involving the esophagus and colon, without cutaneous manifestation.

Case Report: An 88-year-old gentleman with a past medical history of coronary artery disease on atorvastatin and clopidogrel, atrial fibrillation on warfarin, heart block status post pacemaker, congestive heart failure, hypertension, and diabetes presented to our facility with generalized weakness, near syncopal episodes and an episode of fall secondary to lightheadedness. He had 2- 3 episodes of dark, bloody stool preceding the event.

On presentation, he was hypotensive with a blood pressure 77/34. Hemoglobin was 5.3. PT/ INR of 42.7/ 4.6. Stool for occult blood was positive. He was admitted to the intensive care unit for management of hemorrhagic shock, gastrointestinal bleed, and supratherapeutic INR. He received 2 units of FFP and 4 units of PRBC with resultant hemodynamic stabilization. He was started on intravenous pantoprazole.

Emergent evaluation with esophagogastroduodenoscopy revealed a few medium-sized blebs in the upper third of the esophagus. The rest of the esophagus, stomach, and duodenum were normal. The colonoscopy showed 2 non-bleeding angio-ectasia in the ileum which was likely the source of bleeding. A mucosal nodule was noted in the recto-sigmoid colon consistent with blue nevus syndrome, which was biopsied and showed diminutive hyperplastic changes.

With stabilization with hemoglobin, coumarin was resumed and titrated to target INR. He was followed up in the gastroenterology clinic closely and serial hemoglobin remained stable.

Conclusion: BRBNS might present at birth (30%), infancy (9%) or early childhood (48%). One of the persistent complications of BRBNS is iron deficiency anemias due to chronic bleeding from GI lesions, requiring iron supplements, frequent blood transfusions. Multiple therapeutic modalities are used in the management including antiangiogenic agents such as corticosteroids and interferon-alpha, octreotide, sirolimus, sclerotherapy and

aggressive surgery. Our patient serves to highlight the importance of high index of clinical suspicion of BRBNS, even when the presentation is atypical without any cutaneous findings.

Learning Objectives:

- We report this case to enhance the awareness of this syndrome. When a patient develops gastrointestinal bleeding and multiple angiomas, a diagnosis of blue rubber bleb nevus syndrome should be considered and an early diagnosis will improve the patient's quality of life.

A Rare Domestic Case of Human Tracheopulmonary Myiasis Caused by Cuterebra Species

Category: Medicine & Medical Specialties / Oral Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: Myiasis refers to the infestation of human or vertebrae tissue with dipterous (two-winged) larvae (maggots). Infestations involving the lower respiratory tract are exceedingly rare. Only four other cases of pulmonary myiasis have been documented in the medical literature within the United States (not due to a tracheostomy or secondary to some other iatrogenic cause). We describe a patient that presented to the emergency department after having expectorated a live Cuterebra larva during a coughing fit.

Case Presentation: A 51-year-old white female presented to the emergency department after expectorating a live Cuterebra larva during a coughing fit. She reported recent travel to Florida and recalled an insect flying into her mouth while on an evening walk. One week later, she developed a non-productive cough. She was subsequently treated for bronchitis with antibiotics unsuccessfully. On presentation, she was afebrile and appeared without distress. However, she brought a larva with her in a bag that she claimed had been coughed up. The live specimen was subsequently sent to pathology where it was measured at 15 mm in length. A CBC showed leukocytosis (11.6 x 109/liter) and eosinophilia (34%). The specimen was subsequently recognized by the Entomology department at the University of Georgia to be a larva from the genus Cuterebra. The patient underwent bronchoscopy revealing a protuberant mass in the left posterolateral portion of the trachea. Forceps were used to remove a tissue sample from within the cavitation. A tracheal biopsy revealed chronic tracheitis with eosinophilia and retained larval fragments. After specimen removal, the area was debrided and irrigated with saline. The patient had a complete resolution of symptoms within three weeks.

Final Diagnosis: Tracheopulmonary Myiasis

Management/Outcome/Follow up: Treatment initially involves mechanical removal of the maggots followed by anti-parasitic drugs such as ivermectin and anti-inflammatory drugs such as prednisone. Prevention of secondary bacterial infection may be necessary. Repeated bronchoscopy with saline wash helps remove remaining larvae without damaging bronchial epithelium. While tracheopulmonary myiasis in humans is rare, it must be considered in the differential diagnosis among patients presenting with unexplained respiratory distress and hypoxia with a recent travel history to tropical regions.

Learning Objectives:

- Discuss risk factors for the development of myiasis
- Identify common presenting symptoms and diagnostic findings in myiasis
- Learn the appropriate treatment options for myiasis

References:

1. Review Article - Cutaneous myiasis: a review of the common types of myiasis
2. Robbins K, Khachemoune A. Cutaneous myiasis: a review of the common types of myiasis. Int J Dermatol. 2010;49(10):1092-1098. doi:10.1111/j.1365-4632.2010.04577.x
3. Review Article - Incidence of myiasis among humans - A review.
4. Singh A, Singh Z. Incidence of myiasis among humans-a review. Parasitol Res. 2015;114(9):3183-3199. doi:10.1007/s00436-015-4620-y

Investigating the Underlying Factors of Homelessness in the Skid Row Community

Category: Public Health & Environmental Medicine / Oral Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Background: Skid Row is an impoverished neighborhood in Los Angeles, also known as the homeless capital of America. Those experiencing homelessness have compounding needs that are largely unmet by existing safety-net systems. The goal of this study is to evaluate the needs of homeless individuals in the Skid Row community, to better tailor services for the homeless population residing in the area. For the study, the International Collegiate Health Initiative (ICHI), a 501(c)-3 nonprofit based in the University of California, Los Angeles, conducted a community needs assessment and a review of the literature regarding community-based solutions to addressing unmet needs of this population.

Methods: This study uses a cross-sectional survey approach to conduct a community needs assessment. We included yes or no answers, numerical responses, and open-ended question response types. The questions contained questions regarding age, demographics, drug use, medical service use, benefits received, and needs. For data collection, ICHI team members conducted surveys of adults residing in Skid Row on three separate days. A total of 163 adult individuals responded to our survey. We conducted a descriptive analysis of data from our needs assessment surveys, and examined the data to inform how services would be tailored for this community.

Findings: Survey findings reveal unmet health, social, and employment needs among unhoused individuals in Skid Row. Over 80% of individuals who took the survey self-identified as homeless and over 75% were seeking housing. Over 75% of the homeless individuals surveyed reported having insurance, with the most common health insurance provider being MediCal. Over 75% of individuals surveyed are interested in accessing health screenings. There was a high unemployment rate, with over 45% of respondents currently seeking employment, and over 80% would consider themselves struggling financially. Mental health struggles are prevalent, over 40% of individuals self-reported they experience struggles with their mental health.

Conclusions: There is potential to meet the needs of the unhoused population through various community efforts and public health interventions. Service priorities for mental health care, medical care, and employment services, are corroborated by prior literature that identifies high mental health issues, substance use, and underemployment.

Learning Objectives:

- Discuss the multifaceted health care needs of the homeless population in Skid Row.
- Examine solutions to address the needs of the homeless population in Skid Row.
- Compare and contrast the needs of the homeless population in Skid Row to those of other homeless populations in the United States.

References:

1. Henry M, de Sousa T, Roddey C, et al. The 2020 Annual Homeless Assessment Report to Congress. The U.S. Department of Housing and Urban Development. 2021 Jan.
2. The Council of Economic Advisers. The State of Homelessness in America. National Homeless Information Project. 2019 Sep.
3. United States Interagency Council on Homelessness. California Homelessness Statistics. 2020.
4. Los Angeles Homeless Services Authority. 2020 Greater Los Angeles Homeless Count—City of Los Angeles. Los Angeles, CA. 2020 Jul 29.
5. Baggett TP, O'Connell JJ, Singer DE, et al. The unmet health care needs of homeless adults: a national study. Am J Public Health. 2010 Jul;100(7):1326-33.
6. Yu W. Homelessness in the U.S., California and Los Angeles. Anderson School of Management. 2018 Jun.
7. Los Angeles Homeless Services Authority. 2020 Greater Los Angeles Homeless Count—Skid Row. Los Angeles, CA. 2020 Jul 30.
8. Teruya C, Longshore D, Andersen RM, et al. Health and health care disparities among homeless women. Women Health. 2010 Dec;50(8):719-36.
9. Dawson A, Jackson D. The primary health care service experiences and needs of homeless youth: a narrative synthesis of current evidence. Contemp Nurse. 2013 Apr;44(1):62-75.
10. Hamilton AB, Poza I, Hines V, et al. Barriers to Psychosocial Services among Homeless Women Veterans. J Soc Work Pract Addict. 2012 Jan 1;12(1):52-68.
11. Nyamathi A, Salem BE, Shin SS, et al. Effect of a Nurse-Led Community Health Worker Intervention on Latent Tuberculosis Medication Completion Among Homeless Adults. Nurs Res. 2021 Nov-Dec 01;70(6):433-442.
12. Feldman BJ, Kim JS, Mosqueda L, et al. From the hospital to the streets: Bringing care to the unsheltered homeless in Los Angeles. Healthc (Amst). 2021 Sep;9(3):100557.
13. Green HD Jr, Tucker JS, Golinelli D, et al. Social networks, time homeless, and social support: A study of men on Skid Row. Netw Sci (Camb Univ Press). 2013 Dec 18;1(3):305-320.
14. Garcia AP, Minkler M, Cardenas Z, et al. Engaging homeless youth in community-based participatory research: a case study from Skid Row, Los Angeles. Health Promot Pract. 2014 Jan;15(1):18-27.
15. Roberson J, Nardi B. Survival Needs and Social Inclusion: Proceedings of the 2010 ACM Conference on Computer Supported Cooperative Work. ACM Conferences. Association for Computing Machinery. 2010 Feb 1;445-448.
16. Kuo A, Los Angeles City Women's Needs Assessment. Downtown Women's Center. 2019
17. Rhoades H, Wenzel SL, Golinelli D, et al. Predisposing, enabling and need correlates of mental health treatment utilization among homeless men. Community Ment Health J. 2014 Nov;50(8):943-52.
18. Wang I, Dopheide JA, Gregerson P. Role of a psychiatric pharmacist in a Los Angeles "Skid-Row" safety-net clinic. J Urban Health. 2011 Aug;88(4):718-23.
19. Collins B, Loukaitou-Sideris A. Skid Row, Gallery Row and the Space in between: Cultural Revitalisation and Its Impacts on Two Los Angeles Neighborhoods. Urban Displacement Project. 2016;87(4):401-427.
20. Henwood BF, Redline B, Lahey J. Surveying Tenants of Permanent Supportive Housing in Skid Row about COVID-19. J Health Care Poor Underserved. 2020;31(4):1587-1594.
21. Tinland A, Loubière S, Boucekine M, et al. Effectiveness of a housing support team intervention with a recovery-oriented approach on hospital and emergency department use by homeless people with severe mental illness: a randomized controlled trial. Epidemiol Psychiatr Sci. 2020 Sep 30;29:e169.

22. Garvin LA, Hu J, Slightam C, et al. Use of Video Telehealth Tablets to Increase Access for Veterans Experiencing Homelessness. J Gen Intern Med. 2021 Aug;36(8):2274-2282.

Traumatic Abdominal Hernia Management using Component Separation and Synthetic and Biological Mesh

Category: Surgery & Surgical Secialties / Oral Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: When patients experience trauma, a myriad of different medical complications may ensue, the most concerning of which include cardiovascular collapse secondary to acute hemorrhage. Rarely do hernias become a principal concern in the setting of a traumatic injury. Traumatic abdominal wall hernias (TAWH) are rare complications of blunt abdominal trauma. Of the various TAWH a rare subtype noted as a “spontaneous lateral ventral hernia” or spigelian hernia occur in less than 1% of all blunt abdominal traumas. As there is currently no clear gold standard in the repair of TAWH, quick improvision is required to ensure there is appropriate closure of the abdominal wall defect.

Case Presentation: A 39 year old male with a past medical history of epilepsy, was brought in by ambulance after being involved in a rollover MVA. The patient was reported to have had a seizure while driving. On physical exam it was noted the patient had a malrotated left ankle along with an absent left dorsalis pedis pulse, and large left lower flank contusion.

Final working diagnosis: Once hemodynamically stable the patient was taken for a complete body Computed Tomography with intravenous contrast. Imaging studies were notable for a left lateral abdominal wall hematoma, left lateral abdominal hernia, comminuted left distal femur fracture, left fibula fracture, and no noted vascular injuries.

Management/Outcome: The patient was noted to have a complex TAWH/Spinglen hernia requiring an open surgical fixation. An incision was made over the defect. The external oblique was divided lateral to linea semilunaris, vertically and separated from the internal oblique. There was complete tearing of the abdominal obliques from the iliac crest with near to total disruption of the internal oblique. The underlying bowel contents were examined and noted to be intact without any injury. The complete obliteration of the left lateral wall provided difficulty with the repair. A biologic mesh was used with reinforcement provided by the synthetic VentralightTM mesh with reinforcement to the iliac crest. The patient progressed with his physical therapy over the next few postoperative days and was discharged from the hospital in stable condition by postoperative day 13.

Learning Objectives:

- Traumatic Abdominal Wall Hernia's may be easily missed on imaging and physical exam findings, and can lead to significant morbidity/mortality, thus the importance of early clinical suspicion in patients who have suffered high impact blunt abdominal trauma is increasingly important.

References:
1. Dennis RW, Marshall A, Deshmukh H, et al.: Abdominal wall injuries occurring after blunt trauma: incidence and grading system. Am J Surg. 2009, 197:413-417. 10.1016/j.amjsurg.2008.11.015
2. Mittal T, Kumar V, Khullar R, et al. Diagnosis and management of Spigelian hernia: A review of literature and our experience. J Minim Access Surg. 2008;4(4):95-98. doi:10.4103/0972-9941.45204
3. Donovan K, Denham M, Kuchta K, et al. Laparoscopic totally extraperitoneal and transabdominal preperitoneal approaches are equally effective for spigelian hernia repair. Surg Endosc. 2021;35(4):1827-1833. doi:10.1007/s00464-020-07582-9

Session 7C - Medicine & Medical Specialties; Public Health & Environmental Medicine; and Quality Health Care, Patient Safety & Best Practices

Outcomes of Octogenarians and Nonagenarians with Low STS Scores after Transcatheter Edge-to-Edge Mitral Valve Repair

Category: Medicine & Medical Specialties / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Background: Mitral regurgitation (MR) is the most prevalent form of valve disease in developed countries. Secondary functional mitral regurgitation and primary degenerative MR became the most common mitral valve pathologies in the geriatric population. Although surgical repair or replacement of the mitral valve is preferred for patients with low the Society of Thoracic Surgeons Predicted Risk of Mortality Score (STS score), age is associated with a high risk of surgical adverse events. In this study, we observed outcomes of octogenarians and nonagenarians with low STS scores who were referred to transcatheter edge-to-edge mitral valve repair (TEER).

Methods: We conducted a retrospective cohort study of 127 patients that underwent TEER. The patients were divided based on their STS scores and age. Octogenarians and nonagenarians with low STS scores for mitral valve repair and replacement (71/127, 55.9%) were compared to patients with age < 80 and high STS scores (5/127, 3.94%). The patients had similar basic characteristics in terms of gender, prior diseases such as stroke, peripheral arterial disease, diabetes, heart failure, chronic lung disease, KCCQ12 score, MR severity, and ejection fraction. Assessed outcomes were post-TEER MR reduction, total-in-hospital stay, and mortality.

Results: After the TEER, no difference was found in terms of reduction in the severity of MR (p=0.57), total-in-hospital stay (p=0.29), and survival between octogenarians and nonagenarians with low STS scores and younger patients with high STS scores. Octogenarians and nonagenarians with low STS scores exhibited a reduction in the severity of MR, average total in-hospital stay of 6.52~9.29 (mean 7.905), and survival of 100% compared to another group who equally had good outcomes.

Conclusions: TEER performed in octogenarians and nonagenarians with low STS scores had equal effectiveness and outcomes compared to patients with age < 80 with high STS scores. This warrants more studies in the future regarding the potential benefits of referring octogenarians and nonagenarians to TEER regardless of the STS score versus a surgical replacement or repair of the mitral valve.

Learning Objectives:

- Utilization of low STS score in referring octogenarians and nonagenarians to TEER.

References:

1. Lee CW, Sung SH, Huang WM, Tsai YL, Chen HY, Hsu CP, et al. Can Elderly Patients with Severe Mitral Regurgitation Benefit from Trans-catheter Mitral Valve Repair? Korean Circ J. 2019 Feb 20;49(6):532–41.
2. Feldman T, Kar S, Elmariah S, Smart SC, Trento A, Siegel RJ, et al. Randomized Comparison of Percutaneous Repair and Surgery for Mitral Regurgitation: 5-Year Results of EVEREST II. Journal of the American College of Cardiology. 2015 Dec 29;66(25):2844–54.

Rare Fatal Post COVID complication- Hydropneumothorax with Tension Pneumothorax

Category: Medicine & Medical Specialties / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: Covid can result in variety of pulmonary and non-pulmonary complications. Pneumothorax especially tension pneumothorax, hydro-pneumothorax and pneumatocoeles are relatively rare yet fatal complications. Here we report such a case who developed tension pneumothorax and loculated hydro-pneumothorax following Covid pneumonia.

Case: Our patient is a 59 year old man who presented with complaint of increasing dry cough and shortness of breath for past 4 days. Before this he was treated for covid 2 weeks prior. He was saturating at 74% on room air and required 15L via non re-breather mask to maintain spo2 above 90%. Chest X-ray (CXR) showed right sided pneumothorax and 24G chest tube was put and connected to water seal. Following CXR showed improvement with lung expansion, patient's work of breathing improved and he was transitioned to nasal cannula at 5L. After couple of days, patient's respiratory distress worsened- requiring vapotherm for oxygenation and also developed hypotension. CXR showed tension pneumothorax and a second chest tube was placed immediately. Patient was intubated. CT chest showed development of loculated hydro-pneumothorax on the same side. CTVS was consulted as patient was not improving with chest tubes. As per their advice, patient needed VATS but he was too unstable for the same. Unfortunately patient passed away with the above complications despite best of our efforts.

Discussion: Incidence of pneumothorax is around 1-2% in covid 19 patients who don't require intubation and up to 15% in patients requiring mechanical ventilation. However tension pneumothorax is extremely rare and possibly fatal complication of covid-19 pneumonia. Similarly incidence of hydro-pneumothorax in patients with no prior incidence of lung diseases is also quite rare. Multiple mechanisms are attributed to these associations. Patients who develop ARDS resulting from these complications, as seen in our patient have worse prognosis. They typically become resistant to chest tube drainage and require thoracotomy/ VATS to recover.

Conclusion: Development of tension pneumothorax or hydro-pneumothorax following covid-19 infection is a marker of poor prognosis. Hence suspicion threshold should be kept low in identifying these conditions so that timely treatment can prevent development of ARDS and help in avoiding operative complications.

Learning Objectives:

- Development of tension pneumothorax or hydro-pneumothorax following covid-19 infection is a marker of poor prognosis.
- Patients who develop ARDS resulting from these complications have worse prognosis. They typically become resistant to chest tube drainage and require thoracotomy/ VATS to recover.
- Incidence of pneumothorax is around 1-2% in covid 19 patients who don't require intubation and up to 15% in patients requiring mechanical ventilation.

References:

1. Vardhan B, Biswas P, Chatterjee S, et al. Post COVID-19 pulmonary ventilation and tension pneumothorax in a non ventilated patient. Journal of family medicine and primary care. 2022:11(4).

Thumbs Down: A Rare Familial Cause of Hypertension Associated with Brachydactyly

Category: Medicine & Medical Specialties / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: While hypertension is extremely common in adults, genetic hypertension syndromes with onset in childhood are uncommon and likely underrecognized, presenting a unique challenge for healthcare providers.

Case Presentation: An otherwise healthy 7-year-old male was noted to have elevated blood pressures (BP) associated with headaches. Labs including basic metabolic panel, thyroid stimulating hormone, serum renin, 24-hour urine catecholamines, and urinalysis were normal. Renal ultrasound with doppler revealed normal renal structure and function without renal artery stenosis. 2D echocardiogram demonstrated appropriate cardiac function and anatomy without hypertrophy. On ambulatory blood pressure monitoring, maximum BP was 157/107 with average BP of 139/81. His hypertension persisted despite a low salt diet, so Lisinopril was initiated. As the patient aged, his hypertension persisted, and he developed short stature (height 3.7th percentile). He had short, thick fingers and toes on exam consistent with brachydactyly. Hand and feet x-rays were declined per family choice. On further questioning, there was a significant family history of early onset hypertension associated with suspected brachydactyly. His father and half-sister, also with short stature and short, thick digits, were diagnosed with high BP and started on anti-hypertensives as teenagers but had never been diagnosed with a secondary hypertension syndrome.

Final/Working Diagnosis: Hypertension and brachydactyly syndrome (HTNB) is an autosomal dominant genetic cause of hypertension that is associated with short stature and a form of brachydactyly manifested by shortening of both phalanges and metacarpals. It is a severe salt-independent but age-dependent condition that, if left untreated, can result in death from stroke before age 50. Prevalence is estimated at less than 1 in 1,000,000, making recognition particularly difficult. In this case, the patient's brachydactyly and short stature allowed for identification of HTNB within himself and his family.

Management/Outcome/Follow-Up: This case demonstrates the utility of recognizing phenotypic features of genetic hypertensive syndromes to aid in early diagnosis, treatment, and counseling for family members. Blood pressure screening including ambulatory blood pressure monitoring should be considered in any patient with brachydactyly and/or short stature, even if phenotypic features are mild. Anti-hypertensive medication should be initiated early given the untreated clinical course of this disease.

Learning Objectives:

- Discuss a rare familial cause of hypertension with onset in childhood
- Describe phenotypic features associated with hypertension and brachydactyly syndrome
- Identify cases of hypertension which require early initiation on anti-hypertensive medication

References:

1. Asim R, Reddy A, Grigorieva Olson O, Ronen JA, Prasad V. Hypertension With Brachydactyly Syndrome: A Case Report. Cureus 2020;
2. Fan P, Zhang D, Yang K-Q, et al.. Hypertension and Brachydactyly Syndrome Associated With Vertebral Artery Malformation Caused by a PDE3A Missense Mutation. American Journal of Hypertension 2019;
3. Growth charts - clinical growth charts [Internet]. Centers for Disease Control and Prevention. 2000 [cited 2022 Jul 24];Available from: https://www.cdc.gov/growthcharts/clinical_charts.htm
4. McKusick VA, O'Neill MJF. Hypertension and brachydactyly syndrome; HTNB - OMIM [Internet]. OMIM. 1986 [cited 2022 Jul 24];Available from: https://www.omim.org/entry/112410
5. Mills KT, Stefanescu A, He J. The global epidemiology of hypertension. Nature Reviews Nephrology 2020;16(4):223–37.
6. Orphanet: Brachydactyly Arterial Hypertension syndrome [Internet]. Orphanet: Brachydactyly arterial hypertension syndrome. [cited 2022 Jul 24];Available from: https://www.orpha.net/consor/cgi-bin/OC_Exp.php?lng=EN&Expert=1276

Chordae Tendineae Vegetation in the Setting of Step mitis: A Case Report

Category: Medicine & Medical Specialties / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Case Presentation: A 29-year-old female with a PMH of uncontrolled type I DM complicated by gastroparesis and neuropathy, gastritis, chronic hep C, polysubstance abuse, chronic narcotic dependence on subutex, and DVT presented with SOB, abdominal pain, and LE edema. She recently returned from a cruise in the Bahamas where the symptoms began one week prior. At that time, she was evaluated by the ship physician who was concerned she may have pulmonary edema, instructing her to present to the ED upon return. She additionally endorsed fevers, chills, cough, congestion, malaise, and nausea vomiting. History of abdominal pain following established at Chapel Hill with planned outpatient MRCP for biliary sludge.

On presentation, she was ill appearing, lethargic, and in resp distress. Tachycardic to 126 with She was afebrile but with an elevated temperature of Temp 100.1 F. Respiratory rated was increased with hypoxia to SpO2 85-

90%. Resolved after 2-3L NC Audible upper airway congestion and coarse bilateral lung sounds were present on exam. WBC 10.9 with lactic of 4.4. CXR was unremarkable with CT PE negative but noted multiple scattered pulmonary nodules concerning septic pulmonary emboli. RUQ US negative for cholelithiasis or cholecystitis in the setting of abdominal pain.

BC positive for Streptococcus mitis and she was initiated on cefazolin with ID consulted for long term antibiotics. TTE noted structurally normal mitral valve with mild regurgitation. Leaflets appeared mildly thickened. There is systolic anterior motion of the chordae tendonae. Cardiology was thus consulted and preformed TEE notable for a mobile echodensity attached to the chordal apparatus of the mitral valve. Though a very unlikely location for vegetation formation, it could not be ruled out. Unusual place for vegetation but unable to exclude. There was additionally noted mobile echodensity attached to the catheter of SVC suspicious for vegetation as well. It was subsequently removed. Repeat echo one week later noted new vegetation on anterior leaflet of the mitral valve.

Final/Working Diagnosis: Vegetation of the Mitral valve Chordae Tendonae

Management/ Outcome/and or Follow-up: Completed full course of antibiotics for Strep bacteremia and vegetation with cleared blood cultures. Course further complicated by CLABSI from PICC due to Acinetobacter and Candida. PICC removed and completed course of Unasyn and Micafungin.

Learning Objectives:

- Identify potential, less common locations for septic vegetations and proper work up to evaluate.

References:

1. “Infective Endocarditis.” NORD (National Organization for Rare Disorders), 20 July 2020, https://rarediseases.org/rare-diseases/endocarditis-infective/.
2. Infectious Endocarditis - StatPearls - NCBI Bookshelf. https://www.ncbi.nlm.nih.gov/books/NBK557641/.
3. Chamat-Hedemand, Sandra, et al. “Prevalence of Infective Endocarditis in Streptococcal Bloodstream Infections Is Dependent on Streptococcal Species.” Circulation, 25 June 2020, https://www.ahajournals.org/doi/10.1161/CIRCULATIONAHA.120.046723.
4. Ashley EA, Niebauer J. Cardiology Explained. London: Remedica; 2004. Chapter 10, Infective endocarditis. Available from: https://www.ncbi.nlm.nih.gov/books/NBK2208/
5. “Medical Knowledge Self-Assessment Program.” ACP, https://mksap18.acponline.org/app/topics/cv/mk18_a_cv_s6/mk18_a_cv_s6_9_1.

Acute Necrotizing Pancreatitis with Splanchnic Thrombosis and Walled-Off Necrosis: A Curious Presentation of Uncertain Etiology

Category: Medicine & Medical Specialties / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: Necrotizing pancreatitis consists of 5-10% of total cases of acute pancreatitis. Complications include splanchnic thrombosis and walled-off necrosis (WON), however this case highlights the persistently unidentifiable etiology of acute necrotizing pancreatitis in a young female. Type 2 autoimmune pancreatitis (T2AIP) is a possible diagnosis, among others.

Case: A 21-year-old female with medical history of two episodes of idiopathic pancreatitis and gastritis presented with severe abdominal pain radiating to back, vomiting, and subjective fevers/chills beginning evening before arrival. Initial evaluation revealed abdominal tenderness, lipase 14,653, leukocytosis 32.5, and lactate 6.4. Abdominal computerized tomography showed decreased attenuation of pancreas with peripancreatic fat stranding and fluid concerning for necrotizing pancreatitis without WON. She received 5 days of meropenem for sepsis and hypoxic respiratory failure until infectious etiology was ruled out with negative procalcitonin. Repeat imaging revealed non-occlusive thrombus in superior mesenteric, portal, and splenic veins. Gallstones, pancreatic divisum, and biliary sludge were ruled out with MRI/MRCP. Patient drank alcohol rarely with last drink 3 weeks prior. No family history of cystic fibrosis or pancreatitis with triglycerides normal on admission. PAIgG, IgG1, IgG2, and IgG3 were low, IgG4 level was normal, and ANA was positive at 1:1280. Seven days later, she was readmitted with a 18x22x27cm multiloculated fluid collection treated with Axios stent and necrosectomy. Finally, a percutaneous drain was placed to remove septic retroperitoneal abscess.

Working Diagnosis: Two most common etiologies in young female patients, gallstone pancreatitis and heavy alcohol use, were ruled out. Differential diagnosis remained genetic, idiopathic, autoimmune, or microlithiasis-induced pancreatitis. Of these, type 2 autoimmune pancreatitis (T2AIP) fit the constellation of clinical and immunologic markers most succinctly. This patient's acute onset of symptoms, age, and normal IgG4 level, and two previous episodes of pancreatitis kept autoimmune pancreatitis high on differential diagnoses list. Considering normal IgG4 level, young age, and lack of biliary/extra-pancreatic findings, T2AIP remains more likely than type 1 autoimmune pancreatitis (T1AIP).

Management: She continues outpatient follow-up with Gastroenterology. Genetic studies were negative for PRSS1 and SPINK, heterozygous for CFTR mutation more consistent with chronic rather than acute pancreatitis. Recent ultrasound indicated gallbladder sludge but T2AIP still cannot be excluded.

Learning Objectives:

- Discuss relatively uncommon etiologies of acute necrotizing pancreatitis in a young female patient
- Compare and contrast diagnostic methods for ruling out common etiologies of acute necrotizing pancreatitis and their relative sensitivities in the context of a more severe and remitting case of pancreatitis
- Clarify treatment guidelines for acute necrotizing pancreatitis and the complexities of genetic testing for young individuals when a significant genetic finding is present

References:

1. https://pubmed.ncbi.nlm.nih.gov/23100216/
2. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3982646/

Gene Therapy Approach in Alzheimer's Disease

Category: Medicine & Medical Specialties / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Background: Alzheimer's Disease (AD) is a neurodegenerative disease presenting with progressive dementia, beta-amyloid (Aβ) plaques, and neurofibrillary tangles. This debilitating disease leads to negative symptoms including the inability to recognize loved ones, a significant reduction in memory retention, and severe confusion. There are no current therapies able to halt, prevent or delay AD pathology. Researchers are investigating potential disease-modifying therapies for AD utilizing a gene therapy approach to deliver the gene of interest which include 1) Brain-derived neurotrophic factor (BDNF), 2) Nerve Growth Factor (NGF), and 3) Apolipoprotein E2 (APOE2).

Methods: All data collected were obtained using published peer-reviewed journal articles from PubMed. The keywords utilized for this search included "Alzheimer's Disease + Gene Therapy", "BDNF + Gene Therapy + Alzheimer's Disease", "APOE + Gene Therapy + Alzheimer's Disease", and "NGF + Gene Therapy + Alzheimer's Disease". The information provided in this review was not limited to a particular time frame.

Results: BDNF functions in developing and maintaining synaptic plasticity and is the key regulator for long-term potentiation. In non-human primates, BDNF gene therapy demonstrated improved behavioral deficits, synaptic plasticity, and memory. A phase 1 clinical trial is ongoing for AAV2-BDNF. NGF is involved in differentiation and has been shown to promote survival of basal forebrain cholinergic neurons. In a phase 1 trial, AAV2-NGF gene therapy demonstrated long-term safety in patients with mild to moderate AD. In a phase 2 trial, AAV2-NGF delivery was feasible and well tolerated; however, no benefit on cognition was found after 24 months. The APOE gene on chromosome 19 encodes apoE protein (three isoforms – APOE2/3/4), which has a significant role in neurological diseases. The E4 isoform is associated with an increased risk of AD; however, the E2 isoform is linked to lower risk and later age of onset. APOE2 administration in in vivo animal studies has shown a neuroprotective effect and a reduction in Aβ plaque aggregation. A phase I clinical trial is ongoing for AAVrh.10hAPOE2 gene therapy in APOE4 homozygotes with AD.

Conclusion: Studies involving the gene therapies of BDNF, NGF, and APOE2 have shown much promise in preclinical studies. Research investigating these potential disease-modifying therapeutics for AD continues to grow. The ongoing clinical trials will allow a better understanding of the gene therapy approach to prevent AD.

Learning Objectives:

- Describe the data available on the gene therapy approach in AD utilizing BDNF, NGF and APOE2
- Discuss the different roles of BDNF, NGF and APOE2 in Alzheimer's Disease
- Describe how the gene therapy approach can halt, prevent or delay the progression of AD

References:

1. https://medlineplus.gov/genetics/understanding/therapy/genetherapy/
2. https://learn.genetics.utah.edu/content/genetherapy/
3. https://health.ucsd.edu/news/releases/Pages/2021-02-18-first-in-human-clinical-trial-to-assess-gene-therapy-for-alzheimers-disease.aspx

Multiple Pneumothoraces Due to COVID-19 Related Interstitial Lung Disease in a Middle-aged Female with AIDS

Category: Medicine & Medical Specialties / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Interstitial lung disease is a broad term that encompasses an extensive group of diffuse parenchymal lung diseases. They are often linked by shared features of inflammation and/or fibrosis, but the exact insult which initiates the process may be of known or unknown origin. COVID-19 has been shown to induce pulmonary fibrosis in select patients yet the major short- and long-term complications are still being widely studied.

A 59-year-old female with a past medical history of hypertension, dyslipidemia, asthma, and uncontrolled HIV with a CD4 of 156 cells/m3 presented to the ED with shortness of breath. She was admitted for acute hypoxemic respiratory failure with a SpO2 of 89% on room air. She tested positive for COVID-19 and initial chest x-ray revealed hazy ill-defined perihilar/infrahilar opacities suggesting a multifocal infectious process. She was started on 2L nasal cannula, Remdesivir, Dexamethasone and broad-spectrum antibiotics. Shortly after her condition deteriorated, she was upgraded to high-flow nasal cannula (HFNC) with 100% FiO2 and a non-rebreather. She was then transferred to the ICU where her condition required extensive management.

Over three months, serial chest x-rays revealed an initial worsening followed by an improvement in interstitial opacity and aeration of both lung bases. However, those imaging findings did not correlate with the high amount of oxygen she required; HFNC with 70-90% FiO2 and non-rebreather. High-resolution CT was therefore indicated and provided a better representation of the underlying process which showed multifocal ground glass opacities and bilateral interstitial lung disease.

The patient experienced her first spontaneous pneumothorax in the right lung shortly thereafter. This was as a result of the decreased elasticity and compliance of the lung as well as the increased respiratory effort in the moments of oxygen desaturation. The first chest tube was inserted, however the lung tissue continued to harden leading down a repetitive vicious cycle of four more pneumothoraces and tube insertions with improvement and deterioration. After three months of this complex disease trajectory, the patient ultimately succumbed to the complications caused by COVID-19 related interstitial lung disease.

Learning Objectives:

- Accurately present the pertinent details of the patient’s case.
- Understand the limitations of chest x-ray and the importance of high-resolution CT in the diagnosis.
- Describe the course of management.
- Recognize the possible complications of COVID-19 induced pulmonary fibrosis.

References:

1. https://www.uptodate.com/contents/approach-to-the-adult-with-interstitial-lung-disease-clinical-evaluation

Acute COVID-Pericarditis: A Rare, But Life-Threatening Condition

Category: Medicine & Medical Specialties / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Intro: In this case, we present the diagnostic dilemma in recognizing acute COVID-pericarditis from the span of cardiovascular complications associated with SARS-COV2 infection, and the escalation of care required to address its increased risk of morbidity and mortality.

Case: A 53-year-old woman with co-morbidities of heart failure with preserved ejection fraction, stroke, chronic obstructive pulmonary disease, and chronic kidney disease was recovering after receiving inpatient antibiotic treatment for severe sepsis due to a urinary tract infection, when she unexpectedly clinically worsened. She had fever, cough, and a positive COVID PCR test. After 7 days of supportive care, her vitals suddenly worsened to a temperature of 102.7°F, an irregular heart rate of 106 beats per minute, a blood pressure of 84/63 mmHg, a respiratory rate of 20 breaths per minute, and a pulse oxygenation of 93%. On physical exam, she was in respiratory distress, using accessory muscles to breathe; diffuse pulmonary wheezing was audible on auscultation. Labs were notable for a creatinine of 3.4 and negative serial troponins. An electrocardiogram displayed atrial fibrillation with rapid ventricular response and diffuse ST elevation with PR depression. A transthoracic echocardiogram revealed a moderate circumferential pericardial effusion with septal bounce, early diastolic ventricular indentation, and respirophasic changes in mitral and tricuspid inflows.

Diagnosis: Acute pericarditis due to COVID, complicated by pre-cardiac tamponade

Management: First, we initiated aspirin and colchicine for the management of pericarditis. We added remdesivir and dexamethasone for increased COVID severity. We also started metoprolol tartrate and amiodarone for atrial fibrillation with apixaban for stroke prophylaxis. Finally, we initiated transfer of the patient to a facility with the means to perform a pericardial window if symptoms of tamponade emerged. Two days later, a surveillance echocardiogram showed similar findings: small-moderate circumferential pericardial effusion measuring 0.7-0.9cm with septal bounce and minimal early diastolic ventricular collapse. With medical management, the patient's blood pressure and heart rate stabilized. Ten days later, a follow-up echocardiogram showed absence of both early diastolic collapse and respirophasic changes.

Learning Objectives:

- Recognize the signs, symptoms, and laboratory findings associated with COVID Pericarditis
- Escalate management appropriately for COVID patients who develop pericarditis

References:

1. Buckley BJR, Harrison SL, Fazio-Eynullayeva E, Underhill P, Lane DA, Lip GYH. Prevalence and clinical outcomes of myocarditis and pericarditis in 718,364 COVID-19 patients. Eur J Clin Invest. 2021;51:e13679.
2. Diaz-Arocutipa C, Saucedo-Chinchay J, Imazio M. Pericarditis in Patients with COVID-19: a systematic review. J. Cardiovasc. Med. 2021:22(9):693-700.

FROM BEING DIAGNOSED WITH EARLY DEMENTIA TO HOSPITAL ADMISSION FOR SEPSIS WITH STAPH BACTEREMIA, THE GREAT IMITATOR WOULD NOT STOP CONFOUNDING THE MEDICAL COMMUNITY: THE JOURNEY OF A 64-YEAR-OLD MAN WITH NEUROSYPHILIS.

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Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: Neurological dysfunction is common in the acute care setting and espouses various etiologies which include infectious, inflammatory, and neurodegenerative in nature. Encephalopathy may be acute, chronic, or an acute manifestation of chronic illness. Risk factors of advanced age and existing co-morbidities are useful to determine underlying cause, however it is necessary to maintain a high index of suspicion in atypical scenarios. Termed “the great imitator”, complications of syphilis are increasingly rare due to the curative effectiveness of penicillin. Neurosyphilis is one of such complications which may occur anytime and should always be considered despite the possibility of confounding disease states.

Case report: A 64-year-old male presented with several weeks of clinical decline and lethargy. He has a history of stroke, type 2 diabetes, and dementia. In November 2018, he presented with a painless penile ulcer identified as syphilitic chancre. RPR and FTA-ABS were positive. He was treated with a single dose of IM Benzathine Penicillin G 240,000IU and discharged home. A few months prior, patient was started on Donepezil for dementia. He remained at his neurological baseline until December 2021 when he was brought in for increased confusion, jerks and falls. Basic Labs were unremarkable. He was managed supportively and discharged from the ED.

Two weeks after, he was brought in for unresponsiveness. Neurological function could not be fully assessed but showed intact reflexes. He was initially managed for aspiration pneumonia however began to spike fevers despite broad-spectrum antibiotics. A blood culture showed staph bacteremia. Patient’s neurological status remained poor with few episodes of agitation. Brain MRI showed profound atrophy. A repeat RPR and FTA-ABS were positive, HIV serology was unreactive. Patient was managed with staph-directed therapy and a 14-day course of IV Penicillin G. Unfortunately, his encephalopathy did not improve and he was ultimately transitioned to hospice care.

Discussion: Neurosyphilis is a CNS infection due to Treponema pallidum. It develops 10 to 25 years after initial infection but may occur earlier, especially in immunocompromised patients. Early presentations include; asymptomatic, symptomatic meningitis, meningovascular syphilis, ocular, otosyphilis. General paresis, tabes dorsalis, or dementia are generally termed tertiary syphilis. Tertiary syphilis may mimic other neuropsychiatric diseases with features such as personality changes, forgetfulness, irritability, and sleep-wake cycle disorder. If left untreated, life expectancy is less than 5 years after symptom onset. Clinical features of neurosyphilis pose a diagnostic conundrum in the presence of other infectious foci like staph bacteremia, which may delay disease-focused therapy. Furthermore, the diagnosis of Alzheimer’s dementia should be one of exclusion, after other treatable causes of dementia have been ruled out.

Learning Objectives:

- IDENTIFY THE CHARACTERISTICS OF LATE STAGE AND NEUROSYPHILIS WHICH INCREASES LIKELIHOOD OF MISDIAGNOSIS
- DEMONSTRATE THE NEED TO HAVE A HIGH INDEX OF SUSPICION IN DIAGNOSIS AND TREATMENT OF SYPHILIS
- RULE OUT OTHER CAUSES OF SIMILAR PRESENTATION IN A TIMELY FASHION, AS SYPHILIS AT ALL STAGES IS TREATABLE.

Predictors of Sunscreen Use in U.S. High-School Students: A Systematic Review

Category: Medicine & Medical Specialties / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Background/Knowledge Gap: Skin cancer continues to be the most common malignancy in the United States with melanoma-associated mortality continuing to rise. Rates of skin cancer remain highest in Caucasian populations; however, when diagnosed, skin cancer in skin of color has significantly worse prognosis. Thus, skin cancer prevention campaigns are important for individuals with all skin types. Programs such as Sun Protection Outreach Training by Students (SPOTS) teach local adolescents proper sun-protection and cancer prevention techniques, and daily sunscreen use continues to be the cornerstone of the curricula. With the continued expansion of virtual teaching through platforms like Zoom, these campaigns can take a more targeted approach to identifying vulnerable populations. Thus, the goal of this review was to summarize existing literature on predictors of sunscreen use in adolescent and high school populations.

Methods/Design: A comprehensive literature search was done using the terms ("sunscreen" or "spf" or "sun protection") and ("high school" or "teen" or "teenager" or "adolescent") in Pubmed, Embase and Web of Science. Quantitative data on predictors of sunscreen use were collected.

Results/Finding: A total of 20 studies met all inclusion criteria. All studies examining gender showed increased sunscreen use in females compared to males (n=11). In addition, 5/5 studies showed increased sunscreen usage in younger adolescents compared to older adolescents. Caucasian students were more likely to use sunscreen compared to other ethnicities (4/4 studies). This may be due to perceived sun-sensitivity, as 4/4 studies also showed increased sunscreen use in populations that believed that were more susceptible to sun damage. Two studies examined perceived self-efficacy and concluded that higher levels of sunscreen use correlated with higher self-efficacy, while four studies concluded that increased social or familial use of sunscreen correlated with higher rates of sunscreen use.

Conclusions/Implications: Males, as well as non-Caucasian adolescents, are at the greatest risk for not using sunscreen. This may be due to believing they are low risk for skin cancer, low levels of perceived self-efficacy, or low levels of social and familial use of sunscreen. Skin cancer prevention campaigns may benefit from targeting these populations to make the largest impact on changing sunscreen use habits.

Learning Objectives:

- Identify adolescents at the greatest risk for not using sunscreen.
- Discuss the reasons behind adolescents not using sunscreen.

References:

1. Gloster HM , Brodland DG. The epidemiology of skin cancer. Dermatol Surg 1996;22:217-26.
2. Gloster HM , Neal K. Skin cancer in skin of color. J Am Acad Dermatol 2006;55:741-60; quiz 61-4.
3. Lee JW, Ratnakumar K, Hung KF, Rokunohe D , Kawasumi M. Deciphering UV-induced DNA Damage Responses to Prevent and Treat Skin Cancer. Photochem Photobiol 2020;96:478-99.

4. Matsumura Y , Ananthaswamy HN. Toxic effects of ultraviolet radiation on the skin. Toxicol Appl Pharmacol 2004;195:298-308.
5. Waldman RA , Grant-Kels JM. The role of sunscreen in the prevention of cutaneous melanoma and nonmelanoma skin cancer. J Am Acad Dermatol 2019;80:574-6.e1.
6. Green AC, Wallingford SC , McBride P. Childhood exposure to ultraviolet radiation and harmful skin effects: epidemiological evidence. Prog Biophys Mol Biol 2011;107:349-55.

Coccidioides immitis presenting with acute hydropneumothorax in an immunocompetent patient from South Texas

Category: Medicine & Medical Specialties / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Coccidioidomycosis is a disease caused by the dimorphic fungi Coccidioides immitis and Coccidioides posadasii. Southern California and Southern Arizona have the highest reported rates of “Valley fever”, however coccidioides is also found in parts of West Texas and along the Rio Grande River. Incidence tends to decrease in the eastern part of Texas close to the Gulf of Mexico likely because of increased humidity. Coccidioides incidence also vary with season, winds severity, dust storms and wildfires.

We present a case of a 27-year-old male with a history of e-cigarette smoking who presented to our institution with a 3-week history of shortness of breath and pleuritic chest pain and acute hypoxic respiratory failure. He initially presented to another institution where he was diagnosed with a left sided pneumothorax and a chest tube was placed. After the procedure, he described feeling immediate relief and left against medical advice before evaluation was completed. The chest tube was removed six days later in the outpatient setting, but his symptoms rapidly recurred, which prompted the patient to pursue a higher level of care. Chest x-ray on admission revealed a large loculated left pneumothorax with atelectasis and infiltrates. Furthermore, the patient reported that 2 years prior to presentation, he worked as an electrical lineman in Central California. At the time, he described having a painful nodular rash on his lower extremities with spontaneous resolution. Since his return from California, he had an insidious and intermittent dry cough, which he had mostly ignored. A CT of the chest confirmed a large left hydropneumothorax with atelectasis of the entire left lung and his initial blood work revealed eosinophilia. He had a chest tube placed, and cardiothoracic surgery performed VATS procedure with left lung decortication and pleurodesis. During the procedure, a three-centimeter abscess in the left upper lobe was found and samples were sent for pathology and microbiological evaluation. During the hospitalization, coccidioides antibodies by complement fixation were positive with a titer of 1:16. Cultures from lung tissue specimen grew mold within a week, which was compatible with coccidioides readily growth pattern in culture media at 35°. Given risk of exposure to the laboratory personnel our team communicated our diagnostic suspicion to the laboratory. Postoperative serial chest x-rays showed re-expansion of the left lung. Eventually, chest tube was removed, and the patient was discharged on Voriconazole pending final identification of the mold. After the patient was discharged, culture results were finalized isolating Coccidioides immitis. The results were communicated to the patient and the outpatient care team; and he was switched to fluconazole therapy.

Coccidioidomycosis is more commonly a subclinical and self-limited disease in up to sixty percent of cases. Acute pneumonia (Valley fever), extra thoracic disseminated infection and complications occur more frequently in

immunocompromised hosts. With more frequent wildfires in the Western United States, Coccidiomycosis has increased by almost sixfold in the last two decades in endemic areas. We present a case of severe coccidiomycosis in an immunocompetent host who lived in central California for two months, 2 years prior to manifesting severe respiratory compromise. Clinicians should be able to recognize differential diagnoses for cavitary-like lung lesions, paying close attention to travel history and CDC epidemiology data.

Learning Objectives:

- Describe a case of coccidioides in a not so endemic area. Especially, in an area where the weather is remarkably humid.
- Demonstrate that coccidioides can present in immunocompetent patients with severe disease years after exposure.
- Identify patients at risk of developing coccidioides cavitary lung lesions with travel history to endemic areas.

References:

1. Saubolle MA, McKellar PP, Susland D. Epidemiologic, clinical, and diagnostic aspects of coccidioidomycosis. J Clin Microbiol. 2007 Jan;45(1):26-30full-text
2. Kobziar Leda N. and Thompson George R. "Wildfire Smoke, a Potential Infectious Agent." Science 370, no. 6523 (December 18, 2020): 1408–10. https://doi.org/10.1126/science.abe8116.
3. Information for Healthcare Professionals about Valley Fever (Coccidioidomycosis) page last reviewed: July 12, 2021. Content source: Centers for Disease Control and Prevention, National Center for Emerging and Zoonotic Infectious Diseases (NCEZID), Division of Foodborne, Waterborne, and Environmental Diseases (DFWED)
4. Donovan, Fariba M, et al. "Early Events in Coccidioidomycosis." Clinical Microbiology Reviews, American Society for Microbiology, 16 Oct. 2019, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6927309/.
5. Sever, Megan. "Wildfire Smoke Seeds the Air with Potentially Dangerous Microbes." Science News for Students, 11 Oct. 2021, https://www.sciencenewsforstudents.org/article/wildfire-smoke-seeds-the-air-with-potentially-dangerous-microbes.
6. Das R, McNary J, Fitzsimmons K, Dobraca D, Cummings K, Mohle-Boetani J, Wheeler C, McDowell A, Iossifova Y, Bailey R, Kreiss K, Materna B. Occupational coccidioidomycosis in California: outbreak investigation, respirator recommendations, and surveillance findings. J Occup Environ Med.
7. Larsen RA, Jacobson JA, Morris AH, Benowitz BA. Acute respiratory failure caused by primary pulmonary coccidioidomycosis. Two case reports and a review of the literature. Am Rev Respir Dis. 1985 May;131(5):797-9. doi: 10.1164/arrd.1985.131.5.797. PMID: 4003923.
8. Cunningham RT, Einstein H. Coccidioidal pulmonary cavities with rupture. J Thorac Cardiovasc Surg. 1982 Aug;84(2):172-7. PMID: 7098503.

CARDIAC METASTASES MIMICKING AMYLOIDOSIS IN NEW ONSET HEART FAILURE: A RARE PRESENTATION OF RECURRENT BREAST CANCER

Category: Medicine & Medical Specialties / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: Heart failure is the most common initial manifestation of infiltrative cardiomyopathies, which in many instances can remain underdiagnosed. In patients with oncological history, it can be due to cancer or its treatment complications. The incidence of metastatic disease to the heart is rare at less than <10% (most common with lung, breast, melanoma, and hematological malignancies). We present a rare case of recurrent breast cancer that presented as new-onset heart failure.

Case description: 81 y/o female with a past medical history of hypertension and breast cancer treated with lumpectomy and radiation without adjuvant chemotherapy in remission since 2004, presented with dyspnea on exertion and orthopnea. Noted to have elevated BNP, bilateral pleural effusions, and ejection fraction (EF) of 30 %, was treated for CHF exacerbation. During outpatient follow-up, a new echocardiogram showed an EF 40-45% with an apical thrombus, which resolved with apixaban. On cardiac catheterization, she was noted to have mild nonobstructive coronary disease. Her EF eventually improved to 55%, however, she continued with symptoms despite diuresis and heart failure treatment. She was readmitted 2 months later and found to be in CHF exacerbation, right pleural effusion, for which she had a thoracentesis and was discharged when stable. Cardiac MRI was done and showed normal EF with diffuse late gadolinium enhancement consistent with infiltrative disease. A Technetium pyrophosphate scan was performed and was negative for amyloidosis. The patient presented recurrent symptoms and pleural effusion a month later. She was referred to the hospital for a myocardial biopsy. The procedure was complicated with right ventricle perforation and pericardial effusion with tamponade and cardiogenic shock that warranted an emergent pericardial window. She was in the ICU until improved. Pleural fluid from prior thoracentesis, and myocardial biopsy revealed malignant cells consistent with breast cancer ER+. She was started on letrozole and would continue further oncologic workup with PET/CT as an outpatient.

Discussion: Detection of Infiltrative cardiomyopathies has led to improved to better outcomes via disease-specific therapy. Heart failure in oncologic patients can be caused by different mechanisms including radiation, chemotherapy, and cancer metastases. Breast cancer gets to the heart by lymphatic spread most commonly in pericardium; myocardium metastases are rare. Treatment is symptomatic. In our case, the recurrent malignant pleural effusions, nonobstructive CAD, MRI suggestive of infiltrative disease, and negative PYP led to the suspicion of cardiac metastasis. Pathology is the gold standard for the diagnosis of cardiac metastasis.

Conclusion: Cardiac metastases should be considered in any individual with new cardiac symptoms and known malignancy. The prognosis of patients with breast cancer with cardiac metastases is poor.

Learning Objectives:

- Describe cardiac metastasis as a rare site for expansion of recurrent breast cancer
- Identify cardiac metastasis as a contributor factor for heart failure
- Discuss differential diagnosis when assessing for heart failure related to possible amyloidosis and relation to cancer

References:

1. Spectrum of Restrictive and Infiltrative Cardiomyopathies: Part 1 of a 2-Part Series. J Am Coll Cardiol 2018;71:1130-1148.
2. Yusuf SW, Negi SI, Lenihan DJ. Infiltrative cardiomyopathy and pericardial disease. Seminars in Oncology. 2013;40(2):199-209. doi:10.1053/j.seminoncol.2013.01.009 Articles links
3. Goldberg AD, Blankstein R, Padera RF. Tumors Metastatic to the Heart. Circulation. 2013;128(16):1790-1794. doi:10.1161/circulationaha.112.000790

Recurrent Abdominal Pain of an Unexpected Source: A Case Presentation

Category: Medicine & Medical Specialties / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: Ingesting a foreign body may lead to several potentially lethal gastrointestinal complications. Unfortunately, this diagnosis is often not considered due to variable onset of symptoms and due to patients not recalling ingestion. This case report aims to present a case of recurrent abdominal pain and ileitis of four months duration secondary to ingestion of a toothpick and to urge providers to consider foreign bodies as a possible etiology for recurrent ileitis refractory to antibiotic treatment.

Case Presentation: A 74-year-old male was admitted to the hospital in January of 2022 with intractable bilateral lower abdominal pain, characterized as cramping, constant, and waxing and waning in severity. This was his third hospital admission for abdominal pain, the first of which occurred four months prior in October 2021. Each admission, his pain had been treated with intravenous antibiotics. His vital signs were within normal limits. Physical examination was significant for diffuse tenderness to palpation in the lower bilateral abdominal quadrants without peritoneal signs. Laboratory studies revealed a normal leukocyte count. A CT scan showed a likely source of his persistent pain: a small fluid collection with concomitant inflammation in the central mesentery and ileum concerning for perforation. Notably, this fluid collection had been present in prior CT scans but was managed nonoperatively. The patient was started on intravenous piperacillin/tazobactam with plans for diagnostic laparotomy.

Final Diagnosis: Diagnostic laparotomy with small bowel resection and primary anastomosis was performed. The surgical team discovered the source of his abdominal pain: an intact toothpick, perforating the ileum, walled off by omental, colon, and mesentery adhesions.

Management/Outcome/Follow Up: This patient's intractable abdominal pain and ileitis of four months duration was secondary to ingestion of a sharp foreign body: a toothpick. His recovery was complicated by a superficial wound infection noted on postoperative day 8. He recovered bowel function appropriately and his diet was advanced as tolerated. He was discharged with close follow-up in the surgery and wound care clinics.

Learning Objectives:

- Consider foreign body ingestion as part of the differential diagnosis in patients presenting with recurrent and intractable abdominal pain, ileitis, or acute abdomen.
- Consider earlier surgical intervention in patients with waxing and waning improvement of abdominal pain and imaging in a similar abdominal area.
- Further question about previous ingestion if there is high clinical suspicion of ileitis secondary to a foreign body.

KAP Survey Analysis: Demographic Factors and Adherence to Covid-19 Guidelines

Category: Public Health & Environmental Medicine / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Background: COVID-19 has necessitated unprecedented measures all over the world to control the rapid spread of the disease. Like the rest of the world, the US implemented various public health initiatives. Peoples' adherence to regulations (behavior/practice) is thought to be affected by the knowledge they have about the disease and their attitude towards it (KAP). Our study aims to investigate the KAP of New York city metropolitan area, and San Francisco Bay area residents. Overall, the study showed participants had good knowledge but poor attitudes and practices. In this study, we specifically looked at social distancing as a measure of regulation adherence (practice) and assessed how it is affected by demographic factors, knowledge, and attitude.

Methods: A cross sectional study conducted through a digital survey among residents living in the New York Metropolitan and San Francisco Bay area. A detailed 92 question survey was developed and administered online which contained demographics, and questionnaires used to assess knowledge, attitude, and behavior of the public.

Exclusion criteria: The study only included participants of age >= 18

Data Collection: Institutional review board approval was obtained from the University of Virginia. 776 responses were initially recorded however 101 participants were excluded due to either incomplete data or residency location.

Data Analysis: Data analysis was performed using R. A statistical threshold of p-value < 0.05 was set to determine significance.

Results: The number of people who were not social distancing by April was higher went up to 7% from 3% in March ($p<0.001$)
People in the age group of 40-59 were less likely to social distance compared to other age groups ($p = .037$)
People who were considered essential workers were less likely social distancing compared to non-essential workers ($p<0.005$)
We found that there was a direct relationship between educational level and adherence to social distancing guideline ($p <0 .05$)
We found that people who were earning on the higher end of the scale were not distancing compared to the lower earning counterparts ($P= 0.005$)
Who were able to work from home were not social distancing compared to people who were required to go in person. ($p = .01$)

Learning Objectives:

- List the factors that influence adherence to regulations
- Explain how people's attitude and knowledge impact their behavior
- Describe some of the possible factors that impact behavior/practice beside knowledge and attitude and how they impact.

References:
1. Zhong B-L, Luo W, Li H-M, et al. Knowledge, attitudes, and practices towards covid-19 among Chinese residents during the rapid rise period of the covid-19 outbreak: A quick online cross-sectional survey. International journal of biological sciences. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7098034/. Published March 15, 2020. Accessed June 15, 2022.

Venous Insufficiency

Category: Quality Health Care, Patient Safety & Best Practices / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: Venous insufficiency is a common disease that affects millions of patients in the US, so it is important that providers are knowledgeable regarding its workup and treatment and that vascular surgery is consulted early on. Caused by dysfunctional valves, genetic factors, stenosis of veins, deep vein thrombosis, and more, venous insufficiency decreases blood flow to the heart as blood pools in the legs. This results in symptoms such as leg discomfort, burning, pain, numbness, and more.

Case Presentation: A 74-year-old female with a history of limb swelling and chronic vertigo presented to the vascular surgery clinic with bilateral lower extremity heaviness, achiness, cramping and swelling, onset six years ago, that has progressively gotten worse. Physical exam findings showed localized swelling, pitting edema, and changes in skin color of the lower legs. Results of the ankle brachial indexes and arterial doppler pulses showed that arterial disease was unlikely the cause of this patient's symptoms. A venous reflux duplex ultrasound of the lower extremity was performed, demonstrating increased venous reflux bilaterally of the superficial femoral veins and common femoral veins.

Final/Working Diagnosis: The patient’s symptoms and venous reflux were indicative of chronic peripheral venous insufficiency.

Management/Outcome: A left venogram was performed at the outpatient catheter lab. Venous access was achieved via the left femoral vein and IV contrast was used to capture the venous stenosis of the iliac and femoral veins on fluorogram. An intravenous ultrasound measured the diameter of the veins to determine the percentage of venous stenosis, showing greater than 50% stenosis of the external iliac and common femoral veins, thus qualifying the patient for intervention via stent placement. Two stents were deployed and final venogram and IV ultrasound were completed to ensure proper placement of the stent and graft patency.

The patient was sent home later that day with instructions to take aspirin and apixaban daily for three months to decrease risk of blood clots. The patient followed up two weeks later, and will have another ultrasound completed three months post stent placement to determine if her symptoms have improved and to recheck graft patency.

Learning Objectives:
- Discuss importance of provider knowledge of venous insufficiency work-up and treatment.
- Describe symptoms associated with venous insufficiency.
- Demonstrate an understanding of diagnostic modalities associated with venous insufficiency diagnosis.

References:
1. https://my.clevelandclinic.org/health/diseases/16872-chronic-venous-insufficiency-cvi
2. https://www.ncbi.nlm.nih.gov/books/NBK430975/

Follow-up Care in Trauma Patients With Radiographic Incidental Findings

Category: Quality Health Care, Patient Safety & Best Practices / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Purpose: Follow-up care for incidental findings (IFs) on trauma CT scans is a component of comprehensive healthcare. Our objective was to assess the effectiveness of our incidental findings pre-discharge disclosure practice guideline and identification of factors contributing to follow-up failure.

Methods: Secondary analysis of a prospective observational database: 615 patients with IF November 2019 to February 2020. Follow-up compliance was determined by EMR review and/or a phone call after a mail-out request for voluntary participation. Volunteers answered a pre-determined questionnaire regarding follow-up.

Results: 115 patients (19%) had CT-based IF recommending additional imaging or other follow-up. 74 (64%) patients were lost to inclusion due to: death (12.1%), inability to contact (51.3%), or noninterest (5.2%). Of the remaining 36 patients, 19 received follow-up care (52.7%) and 17 did not (47.2%). There were no statistical differences between groups in age, gender, mechanism of injury, GCS, whether informed by physicians or midlevel providers, or type of incidental finding. Non-follow-up patients usually didn't remember the disclosure or discharge paperwork instructions (88%.) Of 19 compliant patients: 9 had additional imaging only, 5 had biopsies and/or surgical intervention (3 cancer, 2 benign), 3 had primary care advise against additional studies and 2 were referred to specialists.

Conclusions: Predischarge disclosure of IF can contribute significantly to overall patient health. Nonetheless, about half of patients don't pursue follow-up, most often citing failure to recall verbal/written instructions. More effective communication with attention to health literacy, follow-up phone calls, and appointments are potential catalysts to patient compliance with follow-up recommendations.

Learning Objectives:
- Upon completion of this lecture, learners should be better prepared to: examine the effectiveness of follow-up protocols within their own institutions.

Session 9 – Top 10 – Finalists for Abstract Competition
5 Oral Presentations; 5 Poster Presentations

Improved Confidence and Clinical Application: The Effects of a Longitudinal Suture Curriculum for Medical Students

Category: Bioethics & Medical Education / Oral Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Background: The ability to competently suture is an expected skill for graduating medical students, but many graduates report feeling unprepared to perform this skill. This study aimed to improve student confidence, increase skill retention, and improve readiness for third-year clerkships by implementing a novel, mandatory, 7.5-hour longitudinal suturing skills curriculum across the first two years of medical school.

Methods: A mandatory 7.5-hour longitudinal curriculum was implemented throughout the first two years of medical school at a large academic health center in the mid-south. Pre-test (n=167) and post-test (n=148) assessments were collected in the first year of the curriculum (2017-18), and follow-up assessment in 2020 after their first clinical year (n=82). Two-tailed t-test analyses were utilized to compare pre-post and follow-up results with significance set at $p<0.05$.

Results: Statistically significant improvement from pre-curriculum to post-test was observed in student confidence in performing three basic skills: proper instrument position, simple interrupted suture, and instrument ties ($p<0.05$). These pre-post confidence gains were sustained ($p<0.05$) at the follow-up assessment following third-year clerkships ($p<0.05$). At follow-up, students also reported the curriculum prepared them to suture wounds during their clerkships at least somewhat (10%), moderately (23%), very (54%), or completely (12%). Most (83%) also reported successfully suturing patient wounds during third-year clerkships without needing significant direction/guidance.

Conclusions: We found that a longitudinal suture curriculum with dedicated faculty involvement can improve student confidence in suturing and overall preparedness for third-year clerkships. Although the study is limited to ratings of student confidence and self-reported performance as well as some attrition of responses at post-test and follow-up, the findings highlight the importance of a focused curriculum dedicated to teaching basic suturing skills. Our findings also contribute to the limited body of work examining longitudinal surgical skills development for medical students.

Learning Objectives:

- Discuss the impact of a focused, longitudinal curriculum dedicated to teaching basic suturing skills to medical students.

References:

1. Emmanuel T, Nicolaides M, Theodoulou I, Yoong W, Lymperopoulos N, Sideris M. Suturing Skills for Medical Students: A Systematic Review. In Vivo. 2021 Jan-Feb;35(1):1-12. doi: 10.21873/invivo.12226. PMID: 33402444; PMCID: PMC7880767.

Granulomatous Reaction and Tuberculosis-Like Symptoms Induced by BCG Immunotherapy Treatment

Category: Medicine & Medical Specialties / Oral Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: Bacillus Calmette-Guerin (BCG) vaccine is a live attenuated bacterial strain of Mycobacterium bovis used for the prevention of tuberculosis (TB). It is also an effective immunotherapy treatment for superficial bladder cancer. Although generally well tolerated, BCG-related infectious complications may occur after administration.These events are uncommon and have an incidence rate of less than 5%, With its wide range of presentations, from flu-like symptoms to severe fatal complications, this condition poses a challenge for the clinician. We report a case of disseminated BCG seen in an elderly patient with calcified granulomatous reactions and mimics of tuberculosis-like symptoms.

Case Presentation: A 70-year-old man was admitted to the hospital three weeks after receiving BCG treatment for bladder cancer and reported having fever and chills This was associated with nausea, vomiting, lightheadedness, confusion, and dry cough. On presentation patient was hypoxic with an 83% oxygen saturation. His other vitals were normal. Examination was normal. Basic labs such as CBC and BMP were normal. Blood cultures and sputum cultures were negative. On imaging both chest CT scan and x-ray revealed bilateral reticulonodular infiltrates. Bronchoalveolar lavage was performed and specimen revealed non-necrotizing granulomatous inflammation on right middle/upper lobe biopsies. Infectious disease was consulted and an extensive work up was completed to rule out other causes of granulomatous disease such as tuberculosis, histoplasmosis, and psittacosis. After ruling out several other causes a presumptive diagnosis of disseminated BCG infection was determined.

Management/ Outcome/and or Follow-up: Patient was started on Isoniazid with improvement of symptoms. Eventually rifampin and ethambutol were added to his regimen. There were no complications during the hospital stay. Patient was diagnosed with disseminated BCG secondary to BCG vaccine as symptoms occurred almost immediately after receiving treatment. The patient also had good response to medications that are traditionally used to treat tuberculosis which further supports our diagnosis. Once symptoms resolved, the patient continued management and surveillance of bladder cancer.

Learning Objectives:

- Diagnose a rare cause of granulomas and TB-like symptoms post-BCG vaccine administration for bladder cancer.
- Discuss risks of bladder cancer treatment in immunocompetent individuals. (3) Identify side effects of BCG vaccine cancer treatment.

References:

1. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4740899/
2. https://www.sciencedirect.com/science/article/pii/S2531043719301813?via%3Dihub
3. https://www.rcpe.ac.uk/college/journal/disseminated-bacillus-calmette-guerin-bcg-cause-delirium-older-adult

Public Perception of COVID-19 Health Information as a Function of Population Demographics

Category: Public Health & Environmental Medicine / Oral Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Background: Despite efforts to promote public health measures and disease prevention, the United States continues to lead the world in COVID-19 caseload and fatalities. This study investigates differences in public attitude toward COVID-19 across population demographics in the United States.

Methods: A self-compiled, validated attitude questionnaire was distributed via social media. 675 complete responses were used for data analysis. Chi-square statistics were calculated to determine if there was a statistically significant difference in attitudes among demographic groups toward the following statements: 1) social distancing prevents COVID-19 complications 2) I have trust in federal guidelines, 3) I have trust in state guidelines, and 4) The virus was made in a lab. The significance threshold was set at $p < 0.01$.

Results: Location of residence was significantly associated with differences in attitude toward social distancing, with a larger proportion of subjects in urban areas agreeing that social distancing prevents COVID-19 complications. Trust in state and public guidelines differed amongst participants who obtained their information from different sources, including the radio, scholarly articles, television, and the newspaper. Attitudes toward the statement “the virus was made in a lab” varied across multiple demographics, including race, essential worker status, location of residence, and main source of information.

Conclusions: Multifactorial demographic factors play a role in how individuals perceive public health information. Understanding public attitudes toward COVID-19 not only provides necessary insight into current public health landscapes, but also guides tailored and targeted interventions that serve diverse populations.

Learning Objectives:

- Describe how demographic factors of location, information source, race, and essential worker status impact public attitudes toward COVID-19.
- Appreciate the complexity and intersectionality of social factors that exist in patient populations.

References:

1. Chen, X., & Chen, H. (2020). Differences in Preventive Behaviors of COVID-19 between Urban and Rural Residents: Lessons Learned from A Cross-Sectional Study in China. International journal of environmental research and public health, 17(12), 4437. https://doi.org/10.3390/ijerph17124437

Tumefactive Multiple Sclerosis - A diagnosis dilemma

Category: Medicine & Medical Specialties / Oral Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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INTRODUCTION: Diagnosis of multiple sclerosis entails evidence of clinical neurological deficits and radiographic dissemination of disease in time. Multiple sclerosis(MS) plaques appear as well-demarcated, homogenous, small ovoid lesions on Magnetic resonace Imaging. Atypical radiographic features of MS lesions include size greater than 2 cm, mass effect, and edema. Tumefactive MS is a condition in which lesions radiographically mimic intra-cranial neoplasms, infarction, or infections. It is a rare form of multiple sclerosis, affecting 1-2 per1000 cases of MS, 3 cases per million per year in general population. We report a case of tumefactive MS who presented with focal neurological deficits and had challenging radiographic findings, posing a considerable diagnostic challenge to both the neurologist and neuroradiologist.

CASE: A 36-year-old white female with past medical history of hypertension, type 2 diabetes mellitus, and hyperlipidemia presented with progressive left sided weakness, slurred speech, dysphagia preceding with stumbling & numbness over left side of face, left arm and left leg over the period of 5 days.

On presentation, vitals were significant for tachycardia with heart rate 113/min and blood pressure 135/85mmhg. Examination revealed sensory deficits involving multiple neurologic territories, positive pronator drift in the left upper extremity and positive hoover sign pointing towards functional weakness. Left leg strength 4/5. Right side 5/5. Cardiopulmonary exam was normal.

She received loading dose of aspirin. Since patient was out of thrombolytic window, thrombolysis was not attempted. Magnetic resonance imaging Brain showed increased FLAIR and T2 signal in right para midline within pons extending to left cerebral peduncle, patchy nonspecific periventricular and sub cortical white matter changes, area of restricted diffusion in brainstem, suggesting subacute infarct initially started on treatment for stroke. Swallow evaluation showed deep laryngeal penetration and risk of aspiration and she was recommended mechanical soft diet with nectar thick liquids. Over the period of 3 days her status remained same and she was discharged to follow up with neurology.

Within 2 weeks she presented with progressively worsening of dysphagia, slurred speech, bladder incontinence, difficulty ambulating due to left sided weakness. Repeat MRI showed small punctate lacunar infarct in anterior belly of pons. Differentials at this time included mild microvascular ischemia and acute tumefactive demyelinating lesion of multiple sclerosis.

She underwent lumbar puncture and cerebrospinal fluid analysis which demonstrated elevated white cells of 57/CUMM, 100% mononuclear and 112mg/dl proteins. Clonal bands were negative. Investigation for autoimmune conditions were negative.

During the period of hospitalization, her left sided weakness progressed to hemiplegia with power 0/5 in the left upper extremity with brisk reflex, and decreased sensation. Cross adductor and positive Hoffman test noted in left lower extremity. She had progression to right sided weakness 3/5 with intact sensation on right. Worsening dysphagia resulted in placement of percutaneous endoscopic gastrostomy. At the time of discharge to rehabilitation center her strength on left side improved to 4/5. She received high dose steroids during hospitalization with plans to start Ocrelizumab in neurology clinic during follow up visit.

DISCUSSION: Our patient highlights the challenging interpretation of clinical and neuroradiological findings and the clinical dilemma in differentiating between acute stroke and acute MS. Acute MS can thus present as pseudo stroke. A natural course of tumefactive MS without treatment has been described as monophasic with a possible consequent conversion to typical relapsing-remitting MS. She did respond to high dose steroids. Therapeutic plasma exchange is another treatment modality along with IV Immunoglobulin.

Learning Objectives:

- Tumefactive MS can present as pseudo-stroke. The purpose of this report is to emphasize the need for timely and accurate diagnosis of MS to optimize treatment. By using disease-modifying agents, a reduction in the frequency and severity of relapses as well as a decrease in brain lesion development can occur. Unfortunately, the clinician often faces a nonspecific and/or atypical clinical presentation, particularly with the tumefactive form of this disease.

Socioeconomic Patterns of Lung Nodule Referral and Management in a Minority-Predominant Community

Category: Medicine & Medical Specialties / Oral Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Background: Lung cancer is the leading cause of malignancy-related deaths in the United States, yet lung cancer screening rates have been consistently lower than 5% for all patients who qualify according to the USTSPF guidelines. It is imperative to understand socioeconomic patterns in lung nodule referral and management to improve the equity of healthcare delivery, especially among minority and underserved communities.

Methods: This is a retrospective analysis performed at a pulmonology clinic serving a unique, minority-predominant community. Patient demographics and medical history were collected. The primary outcome measured was the time interval from referral to the initial clinic visit. Other outcomes measured include lung nodule size changes, diagnosis, and final patient disposition. Statistical analysis was performed with IBM-SPSS 27.

Results: A total of 157 patients referred for new lung nodules were included (45.2% Male, 43.9% African American, average age= 63 years). Across all studied patients, the average time interval from referral to initial clinic visit was 26.6 days. Despite minor variations, this referral-to-clinic interval did not differ significantly across socioeconomic cohorts as stratified by race, insurance status, education level, or patients' location of residence. Albeit there was a non-significant trend for African American patients experiencing longer referral intervals than their Caucasian counterparts (29.2 days vs. 24.2 days, respectively, p=0.154). Similarly, there were trends showing Medicaid patients and patients with lower education levels experiencing longer referral intervals than their peers. Additionally, Medicaid patients, patients with lower education levels, and patients residing in underprivileged neighborhoods showed a trend towards lower rates of continued CT surveillance compared to those of peer groups.

Conclusion: At a pulmonology clinic serving a unique, minority-predominant community, patients' race, insurance status, education level, or location of residence did not significantly affect the timeline or disposition of lung nodule management, though some notable trends were observed. The uniqueness of such findings can partly be attributed to the distinct demographic makeup of our minority-majority patient population and the diverse ethnic backgrounds of our clinical staff. Further work is needed to improve national equity in lung cancer screening.

Learning Objectives:

- Understand current socioeconomic patterns in lung cancer screening.

- Appreciate the underutilization of lung cancer screening on a national scale.
- Aspire to provide better access to lung cancer screening for minority patients, patients from lower SES, and those with limited health literacy.

References:
1. Lewis et al, JNCI, 2020.
2. Zahnd et al, Am J Prev Med, 2019.

Gene Therapy in Parkinson's Disease

Category: Medicine & Medical Specialties / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Background: Parkinson’s disease (PD) is a progressive neurodegenerative disorder resulting in loss of dopamine producing neurons causing tremor, rigidity, and bradykinesia. As current pharmacological therapies are unable to prevent progression, gene therapy is currently being investigated as an alternative approach. Current targets include: GDNF, BDNF, CDNF, VEGF, alpha synuclein, AADC, and GAD. This review article explores the various gene therapy targets currently being studied for the treatment of PD.

Methods: All the data collected, reviewed, and discussed were collected using published peer-reviewed journal articles from PubMed. The information provided in this review was not limited to a specific time frame.

Results: Neurotrophic factor-based gene therapy using glial derived neurotrophic factor (GDNF), brain derived neurotrophic growth factor (BDNF) and cerebral dopamine neurotrophic factor (CDNF) have regenerative and protective effects on dopaminergic neurons in the CNS. Preclinical trials determined that GDNF provided regrowth of striatal neurons and improvement of functional symptoms, while phase 1 clinical trials have failed to do so. In phase 1 clinical trials, AAV2-AADC delivery was well-tolerated and demonstrated visible improvements in PD symptoms and restoration of dopaminergic pathway. When treated with AAV-VEGF transduction, dysregulated movements were decreased. Overexpression of Abl, fractalkine, and heat shock proteins are proven to prevent the aggregation of alpha synuclein through degradation of alpha synuclein and protect tyrosine hydroxylase neurons. Phase 1 and 2 clinical trials show that GAD treatment in PD patients was able to provide a well-tolerated long-term benefit.

Discussion: The above-mentioned gene targets play an important role in synthesis of dopamine, regulation of dopamine production, or modulation of the dopaminergic neuronal pathway; thus, demonstrate great potential as targets for modulating PD physiological and neuropathological symptoms. Upon viral vector transduction, dopamine production, synaptic connections, and motor function improved relative to control groups.

Conclusion: Gene therapy as a treatment modality for PD is growing as data from in vivo and clinical studies show efficacy and safety; however, clinical trials are currently underway to further evaluate these aspects. Further research to assess the long-term benefits, consequences, and effectiveness of PD gene therapy in halting the progression of PD pathology and physiology are required.

Learning Objectives:

- Discuss the current gene therapy targets for Parkinson's disease
- Compare and contrast different gene therapy targets and their current preclinical and clinical results
- Describe the etiology and pathogenicity of Parkinson's Disease.

References:

GDNF:

1. Ayanlaja, A.A., et al., The reversible effects of glial cell line-derived neurotrophic factor (GDNF) in the human brain. Semin Cancer Biol, 2018. 53: p. 212-222.
2. Grondin, R., et al., GDNF revisited: A novel mammalian cell-derived variant form of GDNF increases dopamine turnover and improves brain biodistribution. Neuropharmacology, 2019. 147: p. 28-36.
3. Lapchak, P.A., et al., Adenoviral vector-mediated GDNF gene therapy in a rodent lesion model of late stage Parkinson's disease. Brain Res, 1997. 777(1-2): p. 153-60.
4. Du, Y., et al., Adeno-associated virus type 2 vector-mediated glial cell line-derived neurotrophic factor gene transfer induces neuroprotection and neuroregeneration in a ubiquitin-proteasome system impairment animal model of Parkinson's disease. Neurodegener Dis, 2013. 11(3): p. 113-28.

BDNF:

1. Binder, D.K. and H.E. Scharfman, Brain-derived neurotrophic factor. Growth Factors, 2004. 22(3): p. 123-31.
2. Hernandez-Chan, N.G., et al., Neurotensin-polyplex-mediated brain-derived neurotrophic factor gene delivery into nigral dopamine neurons prevents nigrostriatal degeneration in a rat model of early Parkinson's disease. J Biomed Sci, 2015. 22(1): p. 59.
3. Klein, R.L., et al., Prevention of 6-hydroxydopamine-induced rotational behavior by BDNF somatic gene transfer. Brain Res, 1999. 847(2): p. 314-20.
4. Sun, M., et al., Comparison of the capability of GDNF, BDNF, or both, to protect nigrostriatal neurons in a rat model of Parkinson's disease. Brain Res, 2005. 1052(2): p. 119-29.

CDNF:

1. Bäck, Susanne, et al. “Gene Therapy with AAV2-CDNF Provides Functional Benefits in a Rat Model of Parkinson's Disease.” Brain and Behavior, vol. 3, no. 2, 2013, pp. 75–88., https://doi.org/10.1002/brb3.117.
2. Axelsen, Tobias M., and David P.D. Woldbye. “Gene Therapy for Parkinson’s Disease, an Update.” Journal of Parkinson's Disease, vol. 8, no. 2, 2018, pp. 195–215., https://doi.org/10.3233/jpd-181331.
3. Barker, Roger A., et al. “GDNF and Parkinson’s Disease: Where next? A Summary from a Recent Workshop.” Journal of Parkinson's Disease, vol. 10, no. 3, 2020, pp. 875–891., https://doi.org/10.3233/jpd-202004.
4. Bondarenko, Olesja, and Mart Saarma. “Neurotrophic Factors in Parkinson’s Disease: Clinical Trials, Open Challenges and Nanoparticle-Mediated Delivery to the Brain.” Frontiers in Cellular Neuroscience, vol. 15, 2021, https://doi.org/10.3389/fncel.2021.682597.

VEGF:

1. Xiong, N, et al. “VEGF-Expressing Human Umbilical Cord Mesenchymal Stem Cells, an Improved Therapy Strategy for Parkinson’s Disease.” Gene Therapy, vol. 18, no. 4, 2010, pp. 394–402., https://doi.org/10.1038/gt.2010.152.
2. Falk, Torsten, et al. “Vascular Endothelial Growth Factor B (VEGF-B) Is up-Regulated and Exogenous VEGF-B Is Neuroprotective in a Culture Model of Parkinson's Disease.” Molecular Neurodegeneration, vol. 4, no. 1, 2009, p. 49., https://doi.org/10.1186/1750-1326-4-49.
3. Tian, You-yong, et al. “Favorable Effects of VEGF Gene Transfer on a Rat Model of Parkinson Disease Using Adeno-Associated Viral Vectors.” Neuroscience Letters, vol. 421, no. 3, 2007, pp. 239–244., https://doi.org/10.1016/j.neulet.2007.05.033.

GAD:
1. Blits, Bas, and Harald Petry. “Perspective on the Road toward Gene Therapy for Parkinson's Disease.” Frontiers in Neuroanatomy, Frontiers Media S.A., 9 Jan. 2017, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5220060/.
2. Axelsen, Tobias M, and David P D Woldbye. “Gene Therapy for Parkinson's Disease, an Update.” Journal of Parkinson's Disease, IOS Press, 2018, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6027861/.
3. Emborg, Marina E, et al. “Subthalamic Glutamic Acid Decarboxylase Gene Therapy: Changes in Motor Function and Cortical Metabolism.” Journal of Cerebral Blood Flow & Metabolism, 2007.
4. Niethammer, Martin. “Long-Term Follow-Up of a Randomized AAV2-GAD Gene Therapy Trial for Parkinson's Disease.” JCI Insight, 6 Apr. 2017.

AADC:
1. Ciesielska, Agnieszka, et al. “Depletion of AADC Activity in Caudate Nucleus and Putamen of Parkinson's Disease Patients; Implications for Ongoing AAV2-AADC Gene Therapy Trial.” PloS One, Public Library of Science, 6 Feb. 2017, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5293261
2. Christine, Chadwick W, et al. “Magnetic Resonance Imaging-Guided Phase 1 Trial of Putaminal AADC Gene Therapy for Parkinson's Disease.” Annals of Neurology, John Wiley & Sons, Inc., May 2019, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6593762/.
3. Mittermeyer, Gabriele, et al. “Long-Term Evaluation of a Phase 1 Study of AADC Gene Therapy for Parkinson's Disease.” Human Gene Therapy, Mary Ann Liebert, Inc., Apr. 2012, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4530392/.

Alpha synuclein:
1. Henderson, M.X., J.Q. Trojanowski, and V.M. Lee, α-Synuclein pathology in Parkinson's disease and related α-synucleinopathies. Neurosci Lett, 2019. 709: p. 134316.
2. Mullin, S., et al., Ambroxol for the Treatment of Patients With Parkinson Disease With and Without Glucocerebrosidase Gene Mutations: A Nonrandomized, Noncontrolled Trial. JAMA Neurol, 2020. 77(4): p. 427-434.
3. Migdalska-Richards, A., et al., Ambroxol effects in glucocerebrosidase and α-synuclein transgenic mice. Ann Neurol, 2016. 80(5): p. 766-775.
4. Migdalska-Richards, A., et al., Oral ambroxol increases brain glucocerebrosidase activity in a nonhuman primate. Synapse, 2017. 71(7).

Is Depression a Risk Factor for Developing Dementia?

Category: Mental Health / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Background: Dementia is not a specific disease. It refers to impaired cognition, including the ability to remember, think, or make decisions that interfere with everyday activities. The most common types of dementia include Alzheimer’s disease, vascular dementia, and Lewy body dementia. There are various risk factors for dementia, but one factor that needs a more profound understanding is depression. This review study outlines the relationship between depression and the onset, as well as the prognosis of dementia.
Methods: A literature review (2000-2022) regarding the impact of depression on the development and progression of dementia was conducted. Eligibility criteria included papers published in peer-reviewed journals, and studies involving human subjects. Exclusion criteria for this study included systematic reviews and articles

published prior to 2000. A computerized search of databases (Google Scholar, PubMed) was performed using keyword search terms such as “depression” AND “dementia.”

Results: The risk of dementia varies with the presence and resolution of depression at different ages. The resolution of depression earlier in life is not associated with an increased risk of dementia, but persistent depression from adulthood to late-life leads to a greater risk of cognitive decline. Distinct phenotypes of cognitive impairment have been noted in patients with early-onset vs. late-onset depression. There is a high prevalence of cognitive impairment (~50%) in late-life depression that is persistent even after the remission of depressive symptoms. Late-life onset depression (LLD) may be associated with Alzheimer’s, while recurrent depression may be associated more with vascular dementia. Factors like beta-amyloid protein and grey matter lesions in depressed individuals show a greater impact on memory and executive function. Long-term SSRI use in depressed individuals with mild cognitive impairment delays the progression to Alzheimer’s dementia.

Conclusions: Literature findings suggest that depression has an impact on the development and progression of dementia. Future studies can delve further into whether depression serves as a modifiable risk factor in the progression of dementia. The study of such a relationship is important for preventing and treating dementia in the elderly population affected with depression.

Learning Objectives:

- Compare and contrast the risk of developing dementia with a diagnosis of depression.
- Describe the risk factors related to the association of dementia and depression.

References:

1. https://pubmed.ncbi.nlm.nih.gov/33601735/
2. https://europepmc.org/article/PMC/3704214
3. https://www.nature.com/articles/s41398-021-01269-y
4. https://ajp.psychiatryonline.org/doi/full/10.1176/appi.ajp.2017.17040404

Atypical Presentation of a Rare Subtype of Chronic Inflammatory Demyelinating Polyneuropathy

Category: Medicine & Medical Specialties / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: Chronic inflammatory demyelinating polyneuropathy (CIDP) is an immune-mediated progressive disorder that is often difficult to diagnose due to its shared similarities with many other neurologic conditions and variations in presentation owing to its various subtypes. The most common subtype of CIDP is symmetric sensorimotor, which presents with a gradual onset of symmetrical distal and proximal muscle weakness. However, other subtypes present differently, and often patients do not have a typical presentation. CIDP is an important disorder for clinicians to be aware of, as when left untreated, it can lead to multiple relapses and severe disability.

Case Presentation: This case report details the diagnostic work up of one particular patient with both asymmetric peripheral nerve and cranial nerve involvement, both of which are rather uncommon presentations of CIDP

according to recent literature. The aim of this case report is not only to bring to light the many ways CIDP may manifest in a given patient (thus adding to a physician's list of neurologic differentials) but to guide medical decision making in patients with less common conditions.

Final/Working Diagnosis: Approximately 9 years after the patient's initial presentation with cranial nerve palsy, a diagnosis of CIDP was made.

Management/Outcome: Our patient was responsive to IVIG therapy at presentation of first exacerbation which served both therapeutic and diagnostic purposes. Few patients are responsive to mono-therapy when needed to be treated chronically and additional add-on therapies such as corticosteroids, plasmapheresis and immunosuppressants like mycophenolate, azathioprine and cyclophosphamide. Our patient was discharged with PT orders and it was decided to initiate regular IVIG monthly with the addition of mycophenolate mofetil for immunosuppression. Careful consideration of pain management, physical therapy for ambulatory support, and various other modalities to manage symptoms are also crucial to improve the patient's quality of life and minimize long term sequelae when a patient reaches remission.

Learning Objectives:

- Describe the etiology and typical presentation of chronic inflammatory demyelinating polyneuropathy.
- Name several differential diagnoses for chronic inflammatory demyelinating polyneuropathy.
- Describe the treatment options for chronic inflammatory demyelinating polyneuropathy.

A Dangerous Complication of Acute Pancreatitis: Abdominal Compartment Syndrome.

Category: Medicine & Medical Specialties / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: Abdominal compartment syndrome (ACS) is defined by an increased in intra-abdominal pressure (>20 mmHg) associated with new organ dysfunction. The mortality is reported to be approximately 50%, even with surgical abdominal decompression. If not treated promptly, it can be fatal in less than 24 hours. Pancreatitis is a well-known risk factor of ACS and is associated with increased mortality and morbidity. We describe a COVID-19 positive patient, with recurrent acute pancreatitis secondary to hypertriglyceridemia, who developed ACS.

Case: A 34-year-old female with history of recurrent episodes of hypertriglyceridemia-induced acute pancreatitis, presents to the emergency department complaining of severe epigastric pain with associated intractable nausea and vomiting. Initial triglycerides level was above measurable range and lipase level was greater than 1000. Patient was admitted to intensive care unit to initiate continuous insulin infusion. On hospital day 2, patient developed an increased intra-abdominal pressure as measured by a bladder pressure greater than 37 mmHg. Patient was immediately taken to the operating room for surgical decompression via laparotomy and wound vacuum placement. While in the ICU, patient returned to the operating room 5 times for washouts. After 3 weeks in the ICU, patient was extubated, switched from TPN to parenteral feeding, and transferred to the floor. The patient continued to have persistent tachycardia, tachypnea, low-grade fevers and leukocytosis and was empirically started on broad-spectrum antibiotic and antifungal therapy. She did not have any localizing symptoms and a extensive infectious work up for infection was initiated. Blood and urine cultures did not grow any organism. Chest x-ray and bedside US confirmed a large left-sided pleural effusion. Thoracocentesis was performed and body fluid culture was negative for infection. Patient went back to the operating room 2 more

times for washouts and no abscesses or signs of active intra-abdominal infection was found. At that point with a negative infectious workup, the persistent systemic inflammatory response syndrome was thought to be partially related to the underlying pancreatitis. Patient's clinical status continued to improve through the hospital stay and she was eventually discharged home in stable condition.

Discussion: This case illustrates the complexity and difficulty of managing patients with acute pancreatitis who developed abdominal compartment syndrome. Patients with this combination have critically elevated rates of mortality and morbidity, but fortunately hers was discovered early and managed promptly. As seen in this patient, the high metabolic rate secondary to the ongoing inflammatory response of the pancreatitis can cause physiologic and systemic idiosyncrasy and does not necessitate treatment for infectious etiologies. Although pancreatitis is one of the most common diagnosis in inpatient medicine, abdominal compartment syndrome must be considered in a deteriorating patient, as the line of decompensation is extremely thin.

Learning Objectives:

- Describe a case of abdominal compartment syndrome in a patient with acute pancreatitis.
- Demonstrate that acute pancreatitis creates an ongoing inflammatory response with a high metabolic rate, which can compel physicians to initiate antibiotic therapy.

References:

1. Maluso P, Olson J, Sarani B. Abdominal Compartment Hypertension and Abdominal Compartment Syndrome. Crit Care Clin. 2016 Apr;32(2):213-22
2. Bailey J, Shapiro MJ. Abdominal Compartment Syndrome. Crit Care. 2000;4(1):23. Epub 2000 Jan 24.
3. Malbrain ML, Deeren D, De Potter TJ. Intra-abdominal hypertension in the critically ill: it is time to pay attention. Curr Opin Crit Care. 2005;11(2):156.
4. Sugrue M. Abdominal compartment syndrome. Curr Opin Crit Care. 2005;11(4):333.
5. Malbrain ML, Cheatham ML, Kirkpatrick A, Sugrue M, Parr M, De Waele J, Balogh Z, Leppäniemi A, Olvera C, Ivatury R, D'Amours S, Wendon J, Hillman K, Johansson K, Kolkman K, Wilmer A. Results from the International Conference of Experts on Intra-abdominal Hypertension and Abdominal Compartment Syndrome. I. Definitions. Intensive Care Med. 2006;32(11):1722.
6. Vidal MG, Ruiz Weisser J, Gonzalez F, Toro MA, Loudet C, Balasini C, Canales H, Reina R, Estenssoro E. Incidence and clinical effects of intra-abdominal hypertension in critically ill patients. Crit Care Med. 2008;36(6):1823.
7. Malbrain ML. Is it wise not to think about intraabdominal hypertension in the ICU? Curr Opin Crit Care. 2004 Apr;10(2):132-45. doi: 10.1097/00075198-200404000-00010. PMID: 15075724.
8. Kirkpatrick AW, Roberts DJ, De Waele J, Jaeschke R, Malbrain ML, De Keulenaer B, Duchesne J, Bjorck M, Leppaniemi A, Ejike JC, Sugrue M, Cheatham M, Ivatury R, Ball CG, Reintam Blaser A, Regli A, Balogh ZJ, D'Amours S, Debergh D, Kaplan M, Kimball E, Olvera C; Pediatric Guidelines Sub-Committee for the World Society of the Abdominal Compartment Syndrome. Intra-abdominal hypertension and the abdominal compartment syndrome: updated consensus definitions and clinical practice guidelines from the World Society of the Abdominal Compartment Syndrome. Intensive Care Med. 2013 Jul;39(7):1190-206. doi: 10.1007/s00134-013-2906-z. Epub 2013 May 15. PMID: 23673399; PMCID: PMC3680657.

Mystery of dermatitis in young female

Category: Medicine & Medical Specialties / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: Progesterone hypersensitivity is a rare skin reaction to the progesterone exclusively in childbearing females. The reaction can be from exogenous progestins or from endogenous progestin causing symptoms to appear at progesterone peak, which is typically 3-10 days prior to menstrual cycle. Patients with progesterone hypersensitivity dermatitis are frequently misdiagnosed with contact dermatitis or eczematous rash, especially in women who have an irregular cycle.

Case Presentation: A 36-year-old lady presented to the clinic for evaluation of intermittent pruritic maculopapular rash prominent on arms, trunk, and abdominal region for years. Her past medical history was significant for migraine, hypothyroidism, and seasonal allergies. She had itching and hives started in her teenage starting 5-6 days before her cycle followed by resolution after the end of periods. She had an extensive workup and was treated with topical steroids for eczema for years without complete relief. Her physical examination was suggestive of a maculopapular rash on her bilateral arms and abdomen. Differentials were broad including contact dermatitis, eczematous rash, and atopic dermatitis. Blood work showed hemoglobin 14.9 g/dL, white blood cells 4900/µL (eosinophils 00 K/µL), and platelets 211,000 uL. IgE was elevated 503 IU/mil (normal <100 IU/mil), Histamine release 17.1% (normal <16%) and elevated Thyroperoxidase Ab 880 IU/mL (normal < 9 IU/ml) with normal TSH. ESR, CRP, ANA, and CMP came back normal.

Final/Working Diagnosis: The patient was referred to allergy/immunology for cyclic urticaria where she underwent intradermal progesterone skin testing that came back positive confirming the diagnosis.

Management/Outcome/and or Follow-up: The patient was started on oral antihistamine agents and was advised to trial an oral contraceptive pill (OCP) which is the primary treatment to suppress ovulation. The patient declined OCP given a history of migraine. She had a follow-up in 3 months and continued to have the rash while on H1 and H2 antihistamines. She was prescribed prednisone for breakthrough episodes. Other options discussed included gonadotropin-releasing hormone (GnRH) agonists or bilateral oophorectomy in the patient's refractory to treatment. Patient opted for Omalizumab which has only 4 reported cases with successful treatment with Omalizumab. Patient has yet to follow to see the response with Omalizumab.

Learning Objectives:

- Progesterone hypersensitivity is rare dermatitis and usually presents with a cyclical rash in a young fertile female.
- The rash is intermittent in nature and can be confused with contact dermatitis or eczema in patients with irregular menstrual cycles.
- Thorough history taking on the menstrual cycle and results of the intradermal progesterone test are mandatory for diagnosis.
- A multidisciplinary approach is required for successful treatment

Session 10A - Medicine & Medical Specialties

Cardioprotective Effect of Alpha-calcitonin Gene Related Peptide (αCGRP) Encapsulated Alginate Microcapsules in the Pressure-induced Mouse Model of Heart Failure

Category: Medicine & Medical Specialties / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Background: Although several classes of therapeutic agents are available to treat heart failure, the mortality is still very high in humans worldwide. Alpha-calcitonin gene related peptide (αCGRP) is a 37-amino acid neuropeptide and a potent vasodilator. Genetic and pharmacological studies established a cardioprotective role of αCGRP in normal and pathological conditions. Previously our laboratory reported that subcutaneous (s.c.) administration of αCGRP, through osmotic mini-pumps, for 28 days protected hearts against transverse aortic constriction (TAC) pressure overload-induced heart failure in mice. As αCGRP is a short-lived peptide (half-life= ~5 min in human plasma), our laboratory used an FDA-approved immunologically-inactive biopolymer, alginate, as a peptide carrier to increase the bioavailability of αCGRP in circulation. Subcutaneous administration of alginate-αCGRP microcapsules (αCGRP dose= 6 mg/kg/mouse) on alternate days, up to 28 days, improved cardiac functions and decreased cardiac cell death in the TAC-heart failure mice.

Goals: Using a lower concentration of αCGRP, the goal of present study was to determine the cardioprotective pharmacological dose of alginate-αCGRP microcapsules in heart failure mice.

Methods: αCGRP encapsulated alginate microcapsules (containing αCGRP dose= 2 mg/kg per mouse) of 200 µm diameter were prepared by an electrospray method. Male C57BL6 mice were divided into: i- sham, ii- sham-alginate-CGRP, iii- TAC, and iv- TAC-alginate-CGRP. Two days after TAC, sham-alginate-CGRP and TAC-alginate-CGRP groups of mice received alginate-αCGRP microcapsules (αCGRP dose= 2 mg/kg per mouse) s.c. on alternate days for 28 days. Cardiac functions (as measured by fraction shortening, FS, and ejection fraction, EF) in all groups of mice were evaluated by short-axis M-mode echocardiography.
Results- At the end-point, i.e. 28 days of microcapsules delivery, echocardiography data showed that TAC-induced pressure overload significantly reduced EF and FS in TAC-mice compared to sham-mice. However, alginate-αCGRP microcapsules containing αCGRP dose of 2 mg/kg/mouse did not improve these cardiac function parameters in the TAC-mice.

Conclusions: These studies suggested that alginate-αCGRP microcapsules containing αCGRP dose 6 mg/kg/mouse is an effective concentration to protect hearts at pathophysiological levels in the pressure overload-induced heart failure mice. The success of our state-of-art alginate-based αCGRP delivery system will be significant to treat patients suffering from cardiac diseases, particularly heart failure.

The need for the development of novel therapeutic agents for the treatment of cardiovascular diseases-Cardiovascular diseases (CVDs) are the number one killer of men and women worldwide, including the United States. Despite the availability of several classes of therapeutic agents to treat and prevent cardiac diseases, the 5-year survival rate is still only 50%. Globally, ~17.8 million deaths were caused by CVDs in the year 2017, and it is expected to rise to >23.6 million deaths by the year 2030. Nearly 1 in 3 deaths in the United States is accounted by the CVDs and it is estimated that, by the year 2035, ~45% of the US population would have some form of CVDs. It is expected that the total direct and indirect treatment cost of CVDs in the USA will reach $1.1 trillion in the year 2035. These numbers shows that CVDs are placing a heavy financial burden on the economy and the health care system as well. Therefore, more effective therapeutic agents are needed to treat patients with cardiac diseases.

Development and efficacy of a peptide delivery system of a neuropeptide, alpha-calcitonin gene related peptide (α-CGRP), for the treatment of congestive heart failure-In recent years, peptide-based therapeutics are gaining

attention across academic and pharmaceutical industries. Using a series of preclinical in vivo and in vitro experiments, our laboratory established that a neuropeptide α-CGRP (alpha-calcitonin gene related peptide) is a promising therapeutic agent to treat cardiac diseases. However, peptide-based drugs, as the case with α-CGRP, are difficult to use since peptides are very susceptible to the proteolytic degradation, thus present a major hurdle in advancing peptide-based therapeutics. In an attempt to overcome the peptides' in vivo bioavailability issue, we have recently used alginate biomaterial as a drug carrier and developed an alginate based α-CGRP delivery system. Our results in a mouse model of pressure-induced heart failure demonstrated that administration of α-CGRP encapsulated alginate microcapsules protected hearts against pressure-induced heart failure in mice. The success of state-of-the-art alginate-based CGRP delivery system will overcome the stability issues associated with peptide-based therapeutics and have the potential to dramatically change conventional drug therapies used presently to treat the patient suffering from cardiovascular diseases, including heart failure, hypertension, and myocardial ischemia.

A Case Report of Multisystem Inflammatory Syndrome 9 Days after First-dose COVID-19 Vaccination

Category: Medicine & Medical Specialties / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: Multisystem Inflammatory Syndrome in Adults (MIS-A) is a novel sequelae thought to be related to the COVID-19 virus. Not many risk factors have been proven to be identified for MIS-A and it is difficult to predict which patients would be most likely to get this inflammatory response. Factors that are in question include: race, obesity, and vaccination status.

Case presentation: We present the case of a 22-year-old African-American male who developed multisystem inflammatory syndrome 9 days after receiving his first dose of COVID-19 Pfizer vaccine. The patient originally had the COVID-19 virus in July 2021 and tested positive again 3 days after receiving the first dose. Patient did have multiple elevated inflammatory markers. Interleukin-6 was elevated at 18.5.

Final Working Diagnosis: Our patient met all five criteria that the CDC defined as MIS-A1: he presented with an objective fever, was hospitalized for a week with multiple organ dysfunctions, had a positive rapid COVID test, he had several inflammatory markers that were positive (including IL-6, lactic acid, D-dimer, CRP, ferritin, and procalcitonin), and had an absence of a concomitant severe respiratory illness and did not require any oxygenation after the first day of hospitalization.

Outcome: Treatments, including IVIG and steroids, were done with full recovery of the patient ,and he was discharged after 7 days in the hospital. Relationships between MIS-A and vaccination rates along with previous COVID-19 infection rates need to be examined further to determine any sources of causation. There are only a handful of case reports available where MIS-A occurs after vaccination. Not enough is known about predisposing factors and the appropriate treatment strategies and universal guidelines are needed as cases continue to rise.

Learning Objectives:

- Identify key components of Multisystem Inflammatory Syndrome in Adults.

References:
1. Cattaneo P, Volpe A, Cardellino CS, Riccardi N, Bertoli G, Ursini T, Ustalli A, Lodi G, Daroui I, Angheben A. Multisystem Inflammatory Syndrome in an Adult (MIS-A) Successfully Treated with Anakinra and Glucocorticoids. Microorganisms. 2021 Jun 28;9(7):1393. doi: 10.3390/microorganisms9071393. PMID: 34203277; PMCID: PMC8305807.

Spontaneous Sternocleidomastoid Hematoma Associated with Low Molecular Weight Heparin

Category: Medicine & Medical Specialties / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Background: Spontaneous neck hematoma are rare, and can potentially be life threatening if they affect airway. Here we report a case of spontaneous Sternocleidomastoid hematoma in a patient who was initiated on enoxaparin therapy after developing Atrial fibrillation during the hospital course. It is known that anticoagulation is needed in patients with new onset atrial fibrillation to decrease the risk of thromboembolic events. However, use of anticoagulants in critically ill patients poses a huge risk of bleeding. We present a rare case of a patient on therapeutic dose Enoxaparin for anticoagulation for Atrial fibrillation, with CHADS2-VASC of 4 and HAS-BLED of 2, who went on to develop a massive intramuscular sternocleidomastoid hematoma. One of the known major complications is hemorrhage (1-10%), with a handful of cases of spontaneous anterior abdominal wall hematoma being reported until date with varying duration of enoxaparin use. We are reporting the first case of Sternocleidomastoid hematoma in the setting of Enoxaparin use.

CASE: A 85-year-old man with a past medical history of hypertension, hyperlipidemia, diabetes mellitus who presented to the hospital for altered mental status and urinary incontinence. His labs were significant for a WBC of 15 and a positive urinalysis. His urine and blood cultures were positive for Methicillin-resistant Staph Aureus (MRSA). On hospital day 3, he developed new onset atrial fibrillation. Echocardiogram showed systolic dysfunction with EF 40-45% with mild to moderate mitral regurgitation. Given his high risk CHADS2-VASC and HAS-BLED scores, he was started on therapeutic Enoxaparin. On hospital day 9, the patient suddenly developed an expanding neck hematoma with new concerns for neck pain and dysphagia. Vital signs at the time, including pulse oximetry, were stable with no concern for airway compromise. A CT neck revealed a large right sternocleidomastoid intramuscular hematoma. The patient was transferred to the ICU for close airway monitoring for concerns of hematoma expansion and need for emergent intubation. Vascular surgery was consulted with no planned intervention. Enoxaparin was discontinued and Protamine was given for reversal. Fortunately, the patient did not develop any further complications except for pain in the neck. He remained hemodynamically stable and was transferred out of the ICU 24-hours later. His hemoglobin remained stable as well and he as eventually discharged on antibiotics, Cardizem, and Amiodarone. There were plans to re-start anticoagulation in the near future with outpatient cardiology follow-up.

DISCUSSION: Low molecular weight heparins (LMWH) have several advantages compared to unfractionated heparin including longer biological half-life, increased bioavailability and predictable pharmacokinetics negating the need for monitoring. Its clinical use is widespread ranging from treating Non-ST segment elevation myocardial infarctions to thromboprophylaxis in post-operative hip arthroplasties. However, LMWHs including enoxaparin

are associated with major and minor bleeding risk. Commonly reported enoxaparin-induced bleedings are in the abdominal wall and rectus sheet, attributed to the location of the site injection. Major bleedings events from Enoxaparin use in the setting of atrial fibrillation are rare (1.6%). The case presented in this article highlights a very rare bleeding complication seen in patients on therapeutic Enoxaparin. The importance of recognizing this potential complication is in the rapidity of subsequent management in order to prevent life-threatening hemorrhage.

Learning Objectives:

- Differential diagnosis of neck swelling
- Risk vs benefit in the use of anticoagulation therapy in new onset atrial fibrillation in critically ill patients
- Side effects of anticoagulation

References:

1. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6755244/
2. https://journals.viamedica.pl/kardiologia_polska/article/view/82462
3. https://www.sciencedirect.com/science/article/pii/S0735109720351548?via%3Dihub
4. https://pubmed.ncbi.nlm.nih.gov/24259690/
5. https://pubmed.ncbi.nlm.nih.gov/20299623/
6. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6754740/
7. https://www.aafp.org/afp/2002/0715/p261.html
8. https://www.ahajournals.org/doi/pdf/10.1161/01.CIR.0000120509.64740.DC

Feasibility, and Short-Term Outcomes of Transcatheter Edge-to-Edge Mitral Valve Repair in Octogenarians and Nonagenarians without Prohibitive Risks

Category: Medicine & Medical Specialties / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Background: The higher life expectancy and the combination of advanced medical and interventional therapies led to an increased burden of degenerative and functional mitral valve disease in the geriatric population. Mitral valve repair or replacement is preferred management and is often associated with significant morbidity and mortality in patients with advanced age and comorbidities. Patients who are at high surgical risk or prohibitive risk for surgery are referred to a transcatheter edge-to-edge mitral valve repair (TEER), however, there is an existing gray area regarding the inclusion of patients with different prohibitive risks such as the Society of Thoracic Surgeons Predicted Risk of Mortality Score (STS score) for mitral valve replacement or repair, porcelain aorta, frailty, hostile chest, and severe pulmonary artery hypertension (PAH). Therefore, we observed the outcomes of patients in different age groups and their prohibitive risks after TEER.

Methods: This is a retrospective cohort study of 156 patients that underwent TEER. We compared octogenarians and nonagenarians without prohibitive risks (53/156 (34%), average age 88.87~91.54, mean 90.21) to younger patients (103/156 (66%), average age 72.76~74.7, mean 73.3) and with prohibitive risks (STS > 8 and > 6 for mitral valve replacement or repair, porcelain aorta, frailty, hostile chest, and severe PAH). The patients had similar basic characteristics in terms of gender, prior diseases such as stroke, peripheral arterial disease, diabetes, heart failure,

chronic lung disease, KCCQ12 score, MR severity, and ejection fraction. Assessed outcomes were post-TEER MR reduction, total-in-hospital stay, and mortality.

Results: After the TEER, no difference was found in terms of reduction in the severity of MR (p=0.45), total-in-hospital stay (p=0.91), and mortality (p=0.29) between the groups with and without prohibitive risks for MitraClip regardless of age. Octogenarians and nonagenarians without prohibitive risks exhibited a reduction in the severity of MR, average total in-hospital stay of 4.37~9.29 (mean 6.83), and survival of 100 % compared to other groups who equally had good outcomes.

Conclusions: TEER is an equally feasible procedure with excellent short-term outcomes in octogenarians and nonagenarians without prohibitive risks compared to younger patients with prohibitive risks. This warrants future studies about long-term outcomes and benefits of referring patients with advanced age and who are not at prohibitive risk of surgery to TEER.

Learning Objectives:

- Implement a new strategy for managing octogenarians and nonagenarians without prohibitive risks with TEER

References:

1. Lee CW, Sung SH, Huang WM, Tsai YL, Chen HY, Hsu CP, et al. Can Elderly Patients with Severe Mitral Regurgitation Benefit from Trans-catheter Mitral Valve Repair? Korean Circ J. 2019 Feb 20;49(6):532–41.
2. Feldman T, Kar S, Elmariah S, Smart SC, Trento A, Siegel RJ, et al. Randomized Comparison of Percutaneous Repair and Surgery for Mitral Regurgitation: 5-Year Results of EVEREST II. Journal of the American College of Cardiology. 2015 Dec 29;66(25):2844–54.

Revisiting Chronic Osteomyelitis: A Case Report on Chronic Multifocal Osteomyelitis

Category: Medicine & Medical Specialties / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: Herein, we describe a case of a patient who developed chronic osteomyelitis (OM) more than one year after an orthopedic procedure. OM is a feared complication of fracture fixation after musculoskeletal (MSK) trauma as it is related to significant morbidity and mortality. OM can be classified in several ways, such as acute or chronic. For this reason, it is essential to diagnose this condition early which may involve advanced imaging and bone sampling to permit targeted antibiotic therapy. Acute OM generally presents within days to weeks and chronic OM (COM) presents within months to years. In addition to timeline, chronic OM has several features that can aid to prevent any delays in treatment.

Case Description: A 48-year-old woman with a past medical history of recently treated hepatitis C and prediabetes had a motor vehicle accident (MVA) one year prior resulting in a closed, displaced pilon fracture of her right distal tibia and fibula that was complicated by delayed union and treated with external fixation. She presented this admission with two weeks of pain and swelling in her right ankle associated with fevers and chills. She had

circumferential erythema and edema to the area associated with fluctuance. She had a leukocytosis with left shift and elevated inflammatory markers. CT and MRI findings noted sequestrum and involucrum with adjacent fluid collections and sinus tracts consistent with multifocal COM. The abscesses were drained, and biopsies were taken from the site for culture which grew MRSA. She was discharged with a six-week regimen of targeted antibiotic therapy with IV daptomycin.

Discussion: COM often presents atypically and without systemic signs. Advanced imaging is generally required to evaluate the extent of the disease, however, even ultrasound can help with disease management (1). Certain radiologic features help with making the diagnosis of COM including sequestra, involucrum, and sinus tracts (2,3). Multiple studies have looked to see if bacteria cultured from the sinus tracts correlate with perioperative cultures. The consensus is that sinus tract cultures are specific but not sensitive enough to warrant not obtaining a surgical biopsy (4,5). The infection can be confined to the bone or spread to surrounding soft tissues and skin. In late infections, new periosteal bone can form around necrotic bone, creating a fortress around the infected area, thus making treatment extremely challenging (6). These reasons are why practitioners must have a high suspicion of index for COM when patients present with atypical MSK symptoms.

Learning Objectives:

- Discuss the imaging modalities for diagnosing chronic osteomyelitis
- Identify the radiologic features of chronic osteomyelitis

References:

1. Pineda C, Vargas A, Rodriguez AV. Imaging of osteomyelitis: current concepts. Infect Dis Clin North Am. 2006;20(4):789-825.
2. Desimpel J, Posadzy M, Vanhoenacker F. The Many Faces of Osteomyelitis: A Pictorial Review. J Belg Soc Radiol. 2017;101(1):24.
3. Steinmetz S, Wernly D, Moerenhout K, Trampuz A, Borens O. Infection after fracture fixation. EFORT Open Rev. 2019;4(7):468-475.
4. Mackowiak PA, Jones SR, Smith JW. Diagnostic value of sinus-tract cultures in chronic osteomyelitis. JAMA. 1978;239(26):2772-2775.
5. Soomro S, Siddiqi MA, Taufiq I. Diagnostic value of sinus tract culture versus intraoperative bone culture in patients with chronic osteomyelitis. J Pak Med Assoc. 2016;66(Suppl 3)(10):S109-S111.
6. Metsemakers WJ, Kuehl R, Moriarty TF, et al. Infection after fracture fixation: Current surgical and microbiological concepts. Injury. 2018;49(3):511-522.

Weeksella virosa bacteremia in an Immunosuppressed Liver Transplant Patient

Category: Medicine & Medical Specialties / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: Weeksella virosa is an aerobic, non-motile Gram-negative rod that can rarely cause fatal bacterial infections in a variety of clinical contexts; only a handful of documented cases have occurred across the globe in the literature. Here we present a case of W. Virosa bacteremia in an elderly female with a history of liver transplant on immunosuppressive medication.

Case Presentation: A 64-year-old female presented to the Ochsner Medical Center Emergency Department with complaint of malaise, nausea, vomiting, and diarrhea. She had a history of alcoholic cirrhosis status post liver transplant currently on Tacrolimus, hypertension, coronary artery disease, seizure disorder, and recurrent clostridium difficile infections. She had recently been admitted to the hospital for a C. diff infection and had recently completed an extended oral Vancomycin taper for the same. On exam patient was pale, ill-appearing, with diffuse abdominal tenderness and decreased bowel sounds. Given her initial presentation, concern was highest for recurrent C. diff infection versus liver transplant rejection. However, the day after admission, patient developed a new leukocytosis and her clinical condition worsened, prompting sepsis protocol including blood cultures and initiation of broad-spectrum antibiotics (piperacillin-tazobactam and Vancomycin). Blood cultures resulted positive for Gram-negative rods. However, initial bacterial identification techniques were unsuccessful at identifying the organism.

Final Diagnosis: Repeat testing using Bruker MALDI-TOF mass spectrometry confirmed growth of Weeksella virosa bacteria sensitive to multiple antibiotics from the patient's blood cultures.

Management and Outcome: Sensitivity testing demonstrated the bacteria was susceptible to Ceftriaxone. The patient was transisioned from Zosyn to IV Ceftriaxone 1g xxx. She was shortly thereafter discharged from the hospital on a 2-week course of IV Ceftriaxone. Subsequent blood cultures were all negative, and the patient successfully completed her course of antibiotics at home.

Learning Objectives:

- Describe the microbiological characteristics of W. virosa
- Identify prevalence and risk factors associated with W. virosa infection
- Review antibiotic sensitivities and resistance of W. virosa organisms in existing cases

References:

1. Slenker AK, Hess BD, Jungkind DL, DeSimone JA. Fatal case of Weeksella virosa sepsis. J Clin Microbiol. 2012;50(12):4166-4167. doi:10.1128/JCM.01761-12

Session 10B - Emergency & Disaster Medicine; Medicine & Medical Specialties; Mental Health; and Public Health & Environmental Medicine

Anxiety and Dementia: Does Anxiety Play a Role in the Risk of Dementia?

Category: Mental Health / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Background: Dementia is a group of cognitive symptoms. Dementia presents with memory defects, language impairment, difficulty problem-solving, and decline in other daily cognitive functions. There are many types of

dementia with different underlying pathologies. Emerging research points to a multitude of risk factors that increase one's risk of dementia with aging. One such risk factor is having an anxiety disorder. This literature review explores the correlation between anxiety disorders, and the onset and development of dementia.

Methods: A literature review regarding the effects of anxiety on the development and progression of dementia was conducted. Eligible articles for the study included primary journal articles, and meta-analysis published between the years of 2000-2022. Literature search was conducted on various research databases (PubMed, Google Scholar) using key search terms such as "anxiety", "dementia", "anxiety and dementia".

Results: The presence of an anxiety disorder has been noted to increase the risk of dementia. Anxiety in later life is associated with worse cognitive functioning and frequently co-occurs with dementia. Anxiety-related changes in the brain regions (hippocampus, orbitofrontal, medial frontal, and anterior cingulate cortex), and alterations in their functions are associated with cognitive symptoms. Early changes in attention, error-processing, and memory formation have been noted in anxious individuals with a subsequent dementia diagnosis. The correlation between anxiety and dementia is potentially mediated by multiple factors, including cortisol-mediated changes to the gray matter and hippocampal volume, anxiety-induced inflammation, and cellular stress to neuronal cells, as well as genetic risk factors that may increase one's susceptibility to both conditions. Interestingly, in one of the Alzheimer's diseases (AD) studies, of the AD patients, 32.3% had a history of anxiety disorder. The influence of the serotonergic system on cognition and memory shows that alterations to the system is also implicated in both anxiety and dementia.

Conclusions: Anxiety disorder has been shown by multiple studies to play an important role in the development of dementia. Early intervention of anxiety disorders can potentially mitigate or delay the onset and progression of dementia. However, a better understanding of current pharmacological interventions for anxiety disorders and their effects on the pathologies of dementia is necessary.

Learning Objectives:

- Discuss the impact of an anxiety disorder on cognitive functioning.
- Describe the role of anxiety in the development of dementia.

References:

1. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4390420/
2. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3828456/
3. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6675335/
4. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4736204/
5. https://www.sciencedirect.com/science/article/pii/S0304394019302149

"So what if I vape…": A Short Program for Middle School Students about the Impacts of Vaping Nicotine-containing Electronic Cigarettes

Category: Public Health & Environmental Medicine / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: Vaping is a prominent issue impacting adolescent health across the country, with many children not understanding the deleterious effects of nicotine-containing electronic cigarettes. Vaping prevalence in adolescents has been increasing over the past decade, resulting in a serious and worsening and worsening public health issue. Vaping devices have been associated with numerous health impacts, including addiction and acute lung injury. Limited curricula exist focusing on short, one class-length programs targeting the impacts of vaping for adolescents.

Goal and Objectives: This community project seeks to develop a short program that will inform middle school students in Greenville County, South Carolina, about vaping. The main objectives were to provide information on the definition of vaping, the contents of vape pods, why people vape, an introduction to , an introduction to addiction, vaping's impact on health, and steps to quit vaping.

Methods: An initial slideshow presentation on these topics was prepared by medical students at the University of South Carolina School of Medicine Greenville in partnership with the Prisma Health Bradshaw Institute for Community Child Health and Advocacy. Medical student volunteers were recruited and familiarized with the slideshow material before interacting with Greenville County students; they worked in groups of one to three medical students to deliver the presentation. This presentation was first given over the course of twelve forty-minute health classes. Classes were separated by gender and grade level; sixth, seventh, and eighth graders all received instruction.

Future Steps: Future goals of this project include presenting in every middle school in the county yearly and folding delivery into the Pediatrics Residency Program at Prisma Health's Children Hospital in Greenville with the assistance of medical students to ensure longevity.

Learning Objectives:

- Discuss the importance of vaping education for adolescents.
- Be better prepared to be more familiar with e-cigarettes' impact on adolescents' health and the growing prevalence in schools.

References:

1. CATCH My Breath National Campaign and Vaping Prevention Curricula, which can be further reviewed here: https://catch.org/program/vaping-prevention/

Mitral Valve Prolapse presenting as Sudden Cardiac Death

Category: Medicine & Medical Specialties / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: Sudden cardiac death (SCD) can have devastating consequences, especially in younger patients. The presence of mitral valve prolapse (MVP) may increase the risk of sudden death due to ventricular arrhythmias. S-ICD is an ideal choice for younger patients who require ICD therapy. The pitfalls of S-ICD are related to over-sensing, which may lead to inappropriate shocks.

Case Presentation: A 25-year-old female presented with cardiac arrest due to ventricular fibrillation. ROSC was achieved after CPR and three shocks within 15 minutes. ECG post-arrest showed atrial fibrillation with a prolonged

QT and no acute ischemic change. She was admitted to the ICU in shock, requiring high-dose vasopressor support, and started on TTM protocol. The initial transthoracic echocardiogram revealed an EF < 20%. Heart catheterization showed cardiogenic shock with normal coronary anatomy and no coronary artery disease. An Impella device was inserted, and inotropic therapy was initiated. Trans-esophageal echocardiogram showed prolapse of the anterior and posterior mitral valve leaflets with mild to moderate mitral regurgitation. Cardiac MRI showed a normalized EF of 54% and an area of patchy delayed hyper-enhancement of the mid inferolateral wall. Mitral annular disjunction was present. Her rhythm spontaneously converted to sinus rhythm and her QT normalized. Her cardiac arrest was attributed to arrhythmic mitral valve prolapse. She underwent an implant of a subcutaneous ICD (S-ICD) for secondary prevention of sudden death. The patient was discharged home.

Three months later, she presented with an inappropriate ICD shock due to noise artifact while washing her hair. She underwent an explant of her lead and re-implant of a new lead to a deeper subcutaneous location. That evening she experienced another inappropriate shock due to over-sensing of noise. She had severely diminished sensing in all vectors. Subcutaneous air around the electrode was the suspected cause.

Final Diagnosis: Sudden Cardiac Death due to ventricular arrhythmia from mitral valve prolapse

Management: She underwent an explant of her S-ICD with an implant of a transvenous single-chamber ICD. A follow-up five months later showed normal device function with no ventricular arrhythmias. Analysis of the returned electrodes and generator showed no abnormalities.

Learning Objectives:

- Discuss the mechanism of sudden cardiac death from mitral valve prolapse
- Identify lead oversensing as a complication of ICD placement

References:

1. Epstein AE, et al. ACC/AHA/HRS 2008 Guidelines for Device-Based Therapy of Cardiac Rhythm Abnormalities: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Writing Committee to Revise the ACC/AHA/NASPE 2002 Guideline Update for Implantation of Cardiac Pacemakers and Antiarrhythmia Devices): developed in collaboration with the American Association for Thoracic Surgery and Society of Thoracic Surgeons. Circulation. 2008 May 27;117(21):e350-408. doi: 10.1161/CIRCUALTIONAHA.108.189742. Epub 2008 May 15. Erratum in: Circulation.2009 Aug 4; 120(5):e34-5. PMID: 18483207.

Session 10C - Surgery & Surgical Specialties; and Women's & Children's Health

A Rare Case of Retained Surgical Towel Presenting as GERD

Category: Surgery & Surgical Secialties / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: A gossypiboma, derived from the Latin gossypium (cotton) and the Swahili boma (place of concealment), refers to a surgical gauze or towel unintentionally retained within a body cavity. Retained foreign bodies can serve as a nidus for infection, potentially leading to peritonitis, sepsis, and even death.

Case Description: We present a 43-year-old female, with a history of GERD and anemia who presented to the emergency department with dull, crampy left-sided abdominal pain that began three hours after eating a large meal. Her review of systems was grossly negative aside from her abdominal pain. Her surgical history included two C-section deliveries as well as a hysterectomy following her last C-section in 2016.
On primary survey, the patient was afebrile and her vitals were within normal limits. Physical examination of the patient was positive for mild epigastric and left upper quadrant pain with no rebound or involuntary guarding. Her abdomen was otherwise soft, nondistended, with normoactive bowel sounds and no palpable masses.
Initial laboratory findings demonstrated a hemoglobin of 6 g/dL. CT with IV Contrast showed an indeterminate large abdominal mass, measuring 18 cm x 11.2 cm x 8.9 cm.

Final Diagnosis: Due to imaging and laboratory findings, the patient was preliminarily diagnosed with retained surgical item as well as severe anemia, likely secondary to blood loss.

Management/Follow-up: The patient felt relief of her symptoms after administration of calcium carbonate-magnesium hydroxide, Donnatal, and viscous Lidocaine 2%. On day two of admission, the patient remained asymptomatic with stable vital signs, and received two units of packed red blood cells. Because of her severe anemia and imaging findings, surgery was consulted to perform an exploratory laparotomy.
Exploratory laparotomy revealed gross ascites and a 45 cm x 32 cm x 2 cm rectangular shaped foreign body, possibly consistent with a towel. Four pieces of small bowel adhered to a section of large bowel, and were consequently resected and anastomosed. Following an uncomplicated surgery, the patient was admitted for continued management. She was discharged three days after surgery with complete recovery from symptoms.

Learning Objectives:

- Identify signs and symptoms relating to a possible retained surgical towels
- Differentiate between the presenting symptoms of small bowel obstruction, GERD, and retained surgical towels
- Explore possible solutions to prevent sentinel events such as retained surgical towels

References:

1. Biswas, RS, Ganguly S, Saha, ML, Saha, S, Mukherjee, S, & Ayaz, A. (2012). Gossypiboma and Surgeon-Current Medicolegal Aspect – A Review. Indian Journal of Surgery, 74(4), 318–322.

2. Gibbs, V. C. (2011). Retained Surgical Items and Minimally Invasive Surgery. World Journal of Surgery, 35(7), 1532–1539.
3. Hyslop JW, Maull KI. (1982). Natural history of the retained surgical sponge. South Med J. Jun;75(6):657-60. doi: 10.1097/00007611-198206000-00006. PMID: 7089613.
4. Copeland AW. (2021). Retained surgical sponge (gossypiboma) and other retained surgical items: Prevention and management. UpToDate.
5. Schwartz's Principles of Surgery, 11e. Chapter 12: Quality, Patient Safety, Assessments of Care, and Complications; "Never Events" in Surgery.

Palliative Right Hip Disarticulation for Bulky Ulcerating Metastatic Melanoma to Inguinal Lymph Nodes

Category: Surgery & Surgical Secialties / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: We present a case of an 86 year old male who presented for treatment of a large right inguinal mass from recurrent melanoma.

Case Presentation: The patient's melanoma was initially diagnosed in 2015 on his right heel as acral lentiginous melanoma, stage pT3b (Breslow thickness of 2.8 mm, ulceration present). He had previously undergone a right above the knee amputation in 2018 and had recovered well, demonstrating good mobility with a prosthesis. The patient subsequently developed recurrence in his right inguinal lymph nodes refractory to checkpoint inhibitors with rapid progression between May and June of 2022. The recurrence resulted in a large ulcerating tumor with bleeding, odor, need for extensive wound care, and inability to wear a prosthesis. On imaging, there was extensive right inguinal lymphadenopathy with the lesion measuring 20 cm. Additionally, there was no evidence of additional metastatic disease. Goals of care were discussed with the patient and his family, and a palliative right hip disarticulation was planned.

Management: During the operation, a standard circumferential hip disarticulation incision was made. The femoral artery, vein, and nerve were carefully dissected free and ligated. Relevant proximal thigh musculature was then divided to dissect down to the hip joint. The femur was sawed at the femoral neck to expose the posterior compartment of the thigh and posterior musculature. The sciatic nerve was then divided. The femoral head was then disarticulated from the acetabulum and the ligamentum teres was divided. The gluteal muscle was rotated over to fill the space and the incision was closed in layers with underlying drains. The patient was discharged after overnight observation. He returned 2 weeks later to the clinic for a post-op evaluation and his drains were removed. It was noted that the patient’s pain had substantially improved, wound care has become less challenging, and his mobility had increased after the surgery.

Conclusion: In conclusion, palliative surgery is a reasonable option in appropriately selected patients with the potential for significant improvement in quality of life. Palliative surgery helped this patient regain his mobility, independence, and relieved his daily pain from the metastatic lesion.

Learning Objectives:

- Identify clinical cases where palliative surgery may be a viable treatment option for complex symptom management.
- Discuss the benefits of palliative surgery and how it may improve the patient's quality of life.

Need for Earlier Surgical Interventions in Covid-19 Positive Elderly Patients: A Description of Video-Assisted Thoracotomy

Category: Surgery & Surgical Secialties / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: Video-assisted thoracic surgery (VATS) is a safe and reliable option to perform various diagnostic and curative procedures. In comparison to young, healthy individuals, elderly patients are considered poor surgical candidates for intra-thoracic operations due to multiple chronic conditions, risks of general anesthesia, decreased cardiopulmonary reserve, and increased frailty.

Case Presentation: A 95-year-old female presented 2 weeks after a ground-level fall with increased oxygen requirements, multiple rib fractures, and a left-sided hemothorax. Initial management with aggressive respiratory therapy, multiple pigtail chest tubes, and thrombolytics failed to drain the hematoma. To avoid further deconditioning, surgical intervention was deemed necessary. Due to extensive bleeding and visual field obstruction upon thoracoscopy, a video-assisted thoracotomy (VAT) was performed to address the retained hemothorax. Postoperatively, the patient's clinical status was reviewed with serial imaging and oxygen saturation parameters.

Final/Working Diagnosis: This study reports on an elderly patient with superimposed SARS-CoV-2 infection who underwent successful VAT after conservative measures for a retained hemothorax failed. Following conservative management, the patient's chest x-ray showed minor improvement of her hemothorax, incentive spirometry was 500mL, and 4L of O2 via nasal cannula was required to maintain oxygen saturation >88%. Following VAT on hospital day 14, a chest x-ray showed improved left-sided consolidation, incentive spirometry improved to 750mL, and only 1-2L of O2 were required for adequate oxygen saturation. Postoperatively, the patient suffered no complications, reported minimal pain, participated more in physical therapy, and increased oral intake.

Outcomes and Clinical Implications: In this unique case, a SARS-CoV-2 positive, 95-year-old patient significantly improved postoperatively with minimal complications. The patient's elderly age was a major factor in her treatment plan and pursued interventions. SARS-CoV2 was a significant social factor that affected her receiving optimal care. Due to deconditioning and worsening hemothorax, the patient required emergent surgical management. Despite increased morbidity and mortality from conventional surgery, the patient tolerated VAT and demonstrated significant improvement. VATS is a safe, effective option for surgical management of posttraumatic hemothorax in elderly patients age ≥80. VATS is superior to standard thoracotomy in terms of both morbidity and mortality, therefore, age alone should not be a contraindication to operative intervention.
Learning Objectives:

- COVID-19 is known to cause severe medical issues in elderly patients, however, standard surgical therapies should not be delayed in the elderly populations as the risk of severe decompensation is high.

References:
1. Jaklitsch MT, DeCamp MM Jr, Liptay MJ, Harpole DH Jr, Swanson SJ, Mentzer SJ, Sugarbaker DJ. Video-assisted thoracic surgery in the elderly. A review of 307 cases. Chest. 1996 Sep;110(3):751-8. doi: 10.1378/chest.110.3.751. PMID: 8797422.
2. Lin HL, Huang WY, Yang C, Chou SM, Chiang HI, Kuo LC, Lin TY, Chou YP. How early should VATS be performed for retained haemothorax in blunt chest trauma? Injury. 2014 Sep;45(9):1359-64. doi: 10.1016/j.injury.2014.05.036. Epub 2014 Jun 5. PMID: 24985468.
3. Schweigert M, Beron M, Dubecz A, Stadlhuber R, Stein H. Video-assisted thoracoscopic surgery for posttraumatic hemothorax in the very elderly. Thorac Cardiovasc Surg. 2012 Oct;60(7):474-9. doi: 10.1055/s-0031-1298069. Epub 2012 Jan 20. PMID: 22266929.

Development of Early Abdominal Compartment Syndrome associated with Full Thickness Burn Injury: A Case Report and Literature Review

Category: Surgery & Surgical Secialties / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: Burn injuries carry an increased risk of intra-abdominal hypertension and are an independent risk factor for abdominal compartment syndrome (ACS). ACS is most commonly due to large volume resuscitation. The added concern of ACS can complicate resuscitative efforts. Early monitoring for ACS (intraabdominal pressure > 20 mmHg with associated new-onset organ dysfunction) and performing prudent decompressive laparotomies are important factors to keep in mind when treating large surface area burn patients.

Case Presentation: A 60-year-old male presented with a 45% full thickness burns and inhalation injury. The patient arrived to the burn center intubated after being found pulseless and achieving return of spontaneous circulation. He had received a total of 4 Liters of intravenous crystalloids and vasopressors were initiated due to hypotension. During tertiary examination it was noted that there was increased difficulty ventilating the patient and that his abdomen was becoming increasingly distended and tense. His intra-abdominal pressure was then measured and found to be elevated at 32 mmHg.

Final Diagnosis: The findings were suggestive of ACS and a decompressive laparotomy was performed in the emergency department. Upon entering the abdominal cavity, the abdominal contents extruded through the incision and diffuse venous congestion and gastric distention were noted. Items commonly found in operating rooms (Top-Draper®Warmer drape, Kerlix rolls, Jackson-Pratt suction drains, and 3M® Ioban Sterile Antimicrobial Incise Drape) were utilized to maintain an open abdomen where abdominal contents could easily be observed and to prevent delay in performing a decompressive laparotomy, which may otherwise have required complex closure material.

Management/Outcomes: On hospital day 3 the patient had an episode of pulseless electrical activity and underwent resuscitation by the burn team. Pulses were obtained after 1 round of resuscitation efforts. On hospital day 4 the patient ultimately succumbed to his injuries. This unique case describes a patient with 45% full-thickness (FT) TBSA and inhalation injuries requiring an emergent decompressive laparotomy for ACS after only 6L

of resuscitative fluids were administered. This case highlights the importance of early monitoring for ACS and the ease of performing a decompressive laparotomy with commonly found items in the emergency department and operating rooms.

Learning Objectives:

- Identify early abdominal compartment syndrome in patients with severe full-thickness burns and inhalation injury
- Perform frequent monitoring of bladder pressures is indicated in burn patients during fluid resuscitation to monitor for the development of abdominal compartment syndrome
- Implement decompressive laparotomy in an emergency department when needed for abdominal compartment syndrome

References:

1. Mbiine R, Alenyo R, Kobusingye O, et al. Intra-abdominal hypertension in severe burns: prevalence, incidence and mortality in a sub-Saharan African hospital. Int J Burns Trauma. 2017;7(6):80-87.
2. Ivy ME, Atweh NA, Palmer J, Possenti PP, Pineau M, D'Aiuto M. Intra-abdominal hypertension and abdominal compartment syndrome in burn patients. J Trauma. 2000;49(3):387-391. doi:10.1097/00005373-200009000-00001
3. Blaser AR, Björck M, De Keulenaer B, Regli A. Abdominal compliance: A bench-to-bedside review. J Trauma Acute Care Surg. 2015;78(5):1044-1053. doi:10.1097/TA.0000000000000616
4. Frezza EE, Shebani KO, Robertson J, Wachtel MS. Morbid obesity causes chronic increase of intraabdominal pressure. Dig Dis Sci. 2007;52(4):1038-1041. doi:10.1007/s10620-006-9203-4
5. De Keulenaer BL, De Waele JJ, Powell B, Malbrain MLNG. What is normal intra-abdominal pressure and how is it affected by positioning, body mass and positive end-expiratory pressure? Intensive Care Med. 2009;35(6):969-976. doi:10.1007/s00134-009-1445-0
6. Umgelter A, Reindl W, Franzen M, Lenhardt C, Huber W, Schmid RM. Renal resistive index and renal function before and after paracentesis in patients with hepatorenal syndrome and tense ascites. Intensive Care Med. 2009;35(1):152-156. doi:10.1007/s00134-008-1253-y
7. Lozada MJ, Goyal V, Osmundson SS, Pacheco LD, Malbrain MLNG. It's high time for intra-abdominal hypertension guidelines in pregnancy after more than 100 years of measuring pressures. Acta Obstet Gynecol Scand. 2019;98(11):1486-1488. doi:10.1111/aogs.13697
8. Abdominal Compartment Syndrome in the Severely Burned Patient | Journal of Burn Care & Research | Oxford Academic. Accessed May 20, 2022. https://academic.oup.com/jbcr/article-abstract/28/5/708/4636840
9. Strang SG, Van Lieshout EMM, Van Waes OJF, Verhofstad MHJ. Prevalence and mortality of abdominal compartment syndrome in severely injured patients: A systematic review. J Trauma Acute Care Surg. 2016;81(3):585-592. doi:10.1097/TA.0000000000001133
10. Abdominal compartment syndrome in the surgical - ProQuest. Accessed May 20, 2022. https://www.proquest.com/docview/212807975?fromopenview=true&pq-origsite=gscholar
11. Henry R, Ghafil C, Golden A, et al. A Novel Abdominal Decompression Technique to Treat Compartment Syndrome After Burn Injury. J Surg Res. 2021;260:448-453. doi:10.1016/j.jss.2020.11.019
12. Talizin TB, Tsuda MS, Tanita MT, et al. Acute kidney injury and intra-abdominal hypertension in burn patients in intensive care. Rev Bras Ter Intensiva. 2018;30(1):15-20. doi:10.5935/0103-507x.20180001
13. Papavramidis TS, Marinis AD, Pliakos I, Kesisoglou I, Papavramidou N. Abdominal compartment syndrome – Intra-abdominal hypertension: Defining, diagnosing, and managing. J Emerg Trauma Shock. 2011;4(2):279-291. doi:10.4103/0974-2700.82224
14. Malbrain MLNG, Cheatham ML, Kirkpatrick A, et al. Results from the International Conference of Experts on Intra-abdominal Hypertension and Abdominal Compartment Syndrome. I. Definitions. Intensive Care Med. 2006;32(11):1722-1732. doi:10.1007/s00134-006-0349-5

15. Newman RK, Dayal N, Dominique E. Abdominal Compartment Syndrome. StatPearls Publishing; 2022. Accessed May 20, 2022. https://www.ncbi.nlm.nih.gov/books/NBK430932/
16. Cheatham ML. Abdominal Compartment Syndrome: pathophysiology and definitions. Scand J Trauma Resusc Emerg Med. 2009;17:10. doi:10.1186/1757-7241-17-10
17. De Waele JJ, Hoste EA, Malbrain ML. Decompressive laparotomy for abdominal compartment syndrome – a critical analysis. Crit Care. 2006;10(2):R51. doi:10.1186/cc4870
18. Holodinsky JK, Roberts DJ, Ball CG, et al. Risk factors for intra-abdominal hypertension and abdominal compartment syndrome among adult intensive care unit patients: a systematic review and meta-analysis. Crit Care. 2013;17(5):R249. doi:10.1186/cc13075
19. Malkoc A, Wong DT. Lessons Learned From Two Survivors of Greater Than 90% TBSA Full-Thickness Burn Injuries Using NovoSorb Biodegradable Temporizing MatrixTM and Autologous Skin Cell Suspension, RECELLTM: A Case Series. J Burn Care Res. 2021;42(3):577-585. doi:10.1093/jbcr/iraa176
20. Oda J, Yamashita K, Inoue T, et al. Resuscitation fluid volume and abdominal compartment syndrome in patients with major burns. Burns. 2006;32(2):151-154. doi:10.1016/j.burns.2005.08.011
21. Balogh Z, McKinley BA, Cocanour CS, et al. Secondary abdominal compartment syndrome is an elusive early complication of traumatic shock resuscitation. Am J Surg. 2002;184(6):538-543; discussion 543-544. doi:10.1016/s0002-9610(02)01050-4
22. Duchesne JC, Baucom CC, Rennie KV, Simmons J, McSwain NE. Recurrent abdominal compartment syndrome: an inciting factor of the second hit phenomenon. Am Surg. 2009;75(12):1193-1198.

The Effect of 17-Beta-Estradiol on Cognitive Function

Category: Women's & Children's Health / Poster Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Background: The most potent form of estrogen, 17-beta-estradiol, has been well-established in reproductive development. However, more recently, 17-beta-estradiol has been shown to mediate a non-reproductive role on cognition. The presence of specific synthesis precursors and receptors in the brain allow 17-beta-estradiol to mediate cognitive protection. The concern to examine the role of 17-beta-estradiol on cognitive function has also attracted interest due to its involvement in diseases associated with rapid cognitive decline such as Alzheimer's disease.

Design: This review used a compilation of five studies to demonstrate the influence of 17-beta-estradiol on cognition using both qualitative and quantitative data. The research was also conducted on female rat models.
Results: The studies demonstrate the synthesis of 17-beta-estradiol and increased concentration of ER-beta receptors within the brain, which improved memory recall. They also investigated neuroprotective functions of 17-beta-estradiol that were mediated by increased dendritic spine density, altered density spine morphology, increased myelinated fibers as well as pre/post-synaptic protein interaction with 17-beta-estradiol.

Conclusion: The studies demonstrate a beneficial effect of 17-beta-estradiol on cognitive functions such as memory recall and neuroprotective functions to prevent rapid cognitive decline, especially in conditions such as Alzheimer's disease. These findings serve as an advantageous platform to develop hormone therapy treatments with 17-beta-estradiol to prevent cognitive decline in the aging brain and outweigh many of the controversial issues of hormone therapy on cardiovascular and breast cancer events.

Learning Objectives:

- Describe the function of 17-beta-estradiol on cognition
- Discuss the neuroprotective role of 17-beta-estradiol on cognitive decline
- Propose a therapeutic approach to prevent rapid cognitive decline

References:

1. "Estradiol and cognitive function: Past, present and future" https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4318702/

A Diagnosis of a Bronchopulmonary Fistula Due to COVID-19 Infection

Category: Surgery & Surgical Secialties / Oral Abstract Presentation
Disclosure: The authors did not report any financial relationships or conflicts of interest

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Introduction: COVID-19 pneumonia can cause a wide range of complications including pneumothorax, empyema, and in severe cases it can lead to bronchopleural fistula formation (BPF). Spontaneous pneumothorax is associated with worse outcomes in patients with COVID-19. It can occur with or without a pre-existing lung disease, mechanical ventilation, or external event. BPF formation is a serious complication of COVID-19 presenting as an abnormal communication between the pleural space and any of the main branches of the bronchial tree. A diagnosis of BPF is associated with a high morbidity rate if left untreated.

Case Presentation: A 77-year-old male with a history of hypertension, presented to the emergency department for evaluation of flu and COVID like symptoms including rhinorrhea, anosmia, anorexia, headaches, and generalized weakness. The patient had been feeling weak and was unable to ambulate. On admission initial troponins were elevated to 0.46, requiring a heparin drip, and chest x-ray demonstrated patchy interstitial opacification and ground glass throughout the lungs without a pleural effusion, pneumothorax, and normal cardiomediastinal silhouette. Shortly after the patient developed a pneumothorax and had a pigtail catheter placed. After chest tube placement the patient was noted to have a persistent air leak ultimately requiring surgical fixation.

Final Diagnosis: In an elderly patient positive for SARS-CoV-2, in the setting of a spontaneous pneumothorax with a persistent air leak following chest tube placement a diagnosis of a BPF was made. When it was noted that there was no improvement with conservative measures, surgical options were considered. Video-Assisted Thoracic Surgery (VATS) with Talc Pleurodesis and chest tube placement were required. Following surgery, the patient had resolution of his pneumothorax however continued to display a persistent air leak. By post operative day 15 the air leak had resolved, and his chest tube was removed.

Management/Outcome: VATS is a safe and effective option for surgical management in an elderly patient with a persistent air leak even in the setting of COVID-19. Additionally, earlier treatment should be considered to reduce patient's hospitalization. In this unique case, a SARS-CoV-2 positive, elderly patient significantly improved postoperatively with minimal complications and was safely discharged home.

Learning Objectives:

- Earlier treatment with video-assisted thoracic surgery can be considered to reduce patient hospitalization time, which can be beneficial in elderly patients with poor nutritional status.

References:

1. Ahmed I, Shahab H, Ahmed MA, Sohaib M. COVID-19 Presenting with Spontaneous Pneumothorax. J Coll Physicians Surg Pak. 2021;30(1):S29-S31. doi:10.29271/jcpsp.2021.01.S29
2. Martinelli AW, Ingle T, Newman J, et al. COVID-19 and pneumothorax: a multicentre retrospective case series. Eur Respir J. 2020;56(5):2002697. Published 2020 Nov 19. doi:10.1183/13993003.02697-2020
3. Nugent TS, Aladaileh M, Donlon NE, Murphy N, Eaton D. Endobronchial valve use in COVID-19 related pneumothorax and persistent air leak [published online ahead of print, 2021 Nov 3]. Ann R Coll Surg Engl. 2021;10.1308/rcsann.2021.0197. doi:10.1308/rcsann.2021.0197
4. Geraci TC, Williams D, Chen S, et al. Incidence, Management, and Outcomes of Patients With COVID-19 and Pneumothorax [published online ahead of print, 2021 Sep 3]. Ann Thorac Surg. 2021;S0003-4975(21)01545-9. doi:10.1016/j.athoracsur.2021.07.097
5. Aiolfi A, Biraghi T, Montisci A, et al. Management of Persistent Pneumothorax With Thoracoscopy and Bleb Resection in COVID-19 Patients. Ann Thorac Surg. 2020;110(5):e413-e415. doi:10.1016/j.athoracsur.2020.04.011
6. Ahmed H, Badran A, Tamburrini A, Kattach H, Veres L, Alzetani A. Endobronchial Valves in the Management of Persistent Air Leak in Coronavirus Disease 2019. Ann Thorac Surg. 2022;113(1):e1-e3. doi:10.1016/j.athoracsur.2021.08.011