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Category: Clinical Vignette

School: Central Michigan University School of Medicine

Clerkship Director: Patricia Dhar, MD, FACP

Presenter: Alexander Figacz

Additional Authors: Haytham Dimashkieh MD, Daniel Chapman Jeffrey Ross MD, Siraj Ali MD David L Stockman MD

Identification of a Novel OTOF-ALK Fusion in Vaginal Mucosal Melanoma

Translocations of the anaplastic lymphoma kinase (ALK), have been reported in Spitzoid melanocytic neoplasms leading to kinase-fusion proteins that result in immunohistochemically detectable ALK expression. Activating kinase fusions involving the gene for anaplastic lymphoma kinase (ALK) have been reported in 10% of spitzoid neoplasms and mutations in ALK have been reported in 3.5% of cases of cutaneous melanoma according to COSMIC. Herein, we report the first case of mucosal melanoma possessing a previously undescribed, and novel OTOF-ALK t(2;2)(p23.1;p23) translocation. The patient, a 74-year-old female presented to her primary care provider with small amounts of vaginal spotting. Examination revealed a 30.0 mm, ulcerated, vaginal polyp extending from the distal anterior third of the vagina. The tumor consisted of a nested proliferation of epithelioid cells with prominent nucleoli involving the mucosa and submucosa to a depth of 19.0 mm. Frequent mitotic figures were present (8 mitoses per 10 high power fields). By immunohistochemistry, the neoplastic cells uniformly and strongly expressed S-100 protein and Melan-A. The margin of polyp stalk was negative. The patient chose to undergo additional genomic profiling by clinical grade next-generation sequencing which revealed a fusion gene between exon 1 of Otoferlin (OTOF) and exon 3 of anaplastic lymphoma kinase (ALK). Fluorescence in-situ hybridization confirmed rearrangement of ALK and expression of ALK was also identified immunohistochemically. In a 30 month follow-up period, the patient had not developed any local recurrences or metastatic disease.

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Category: Clinical Vignette

School: Central Michigan University School of Medicine

Clerkship Director: Patricia Dhar, MD, FACP

Presenter: Arjun Kalra

Additional Authors: David L. Stockman MD, Sean R. Williamson MD, Allison Young MD, Haytham Dimashkieh MD

Hereditary Leiomyomatosis Renal Cell Carcinoma Syndrome: Report of a Case and Review of Literature

We report a case of a hereditary leiomyomatosis and renal cell carcinoma syndrome with mutations in fumarate hydratase of both uterine leiomyomata and renal cell carcinoma. A 45-year old woman presented with extensive vaginal bleeding for the period of one year. Imaging studies revealed multiple large uterine leiomyomata for which she underwent total abdominal hysterectomy. After an uncomplicated post-surgical course, the patient presented with hematuria eight months later. Additional follow-up studies revealed a left renal mass for which a radical nephrectomy was performed. Pathology revealed a diagnosis of chromophobe renal cell carcinoma with immunohistochemical studies showing immunohistochemical loss of fumarate hydratase. Pathological review of the uterine leiomyomata additionally revealed loss of fumarate hydratase. This is the first reported case of Chromophobe RCC with confirmed immunohistochemical loss of FH in both the RCC and the uterine leiomyomata.

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Category: Clinical Vignette

School: Central Michigan University School of Medicine

Clerkship Director: Patricia Dhar, MD, FACP

Presenter: Sean Masters

Additional Authors: Marites Cumba, MD, Juliette Perzhinsky, MD

Multiple Organ Failure Due to Abdominal Compartment Syndrome Masked by Septic Shock

INTRODUCTION: Abdominal compartment syndrome (ACS) is defined as intra-abdominal pressure greater than 21 mmHg with organ dysfunction and can be of primary or secondary etiology. The signs and symptoms of ACS are non-specific, and thus may be attributed to another pathological process. Failure to diagnose and treat ACS leads to patient demise.

CASE DESCRIPTION: The patient was a 79-year-old male complaining of progressive weakness for two days. On exam, the patient was hypotensive and had abdominal distention. He was admitted to the Intensive Care Unit after acute decompensation requiring intubation with a diagnosis of septic shock with hypovolemia. Due to concerns over bowel ischemia, an exploratory laparotomy was performed with a preoperative concern for possible need for bowel resection. Upon penetrating the peritoneum, a copious amount of serous fluid emanated from the incision. Both large and small bowel were deemed viable. A negative pressure wound therapy device was placed over the incision to decrease fluid accumulation, and a diagnosis of ACS was made.

DISCUSSION: Many findings of ACS in this patient could have been attributed to septic shock, which was his admitting diagnosis. Furthermore, the findings of ACS on an abdominal CT may be subtle or attributed to another process. Therefore, ACS may be forgotten as a potential consequence of septic shock or not recognized until the patient has experienced significant decline. It is important to consider ACS early when a patient exhibits abdominal distention with organ failure or hemodynamic instability, even when another pathology, such as sepsis, is present.

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Category: Research

School: Central Michigan University School of Medicine

Clerkship Director: Patricia Dhar, MD, FACP

Presenter: Shayla Mena

Additional Authors: Nicole Rachel Thompson, Eric Lee, Luke Salbert

Immunotherapy: Reactivating Tumor Infiltrating Lymphocytes

In recent years, interest has shifted towards the field of immunotherapy for the development of specialized cancer treatments and vaccines. Our lab focuses on reactivating pre-existing, tumor antigen-recognizing T cells, called tumor-infiltrating lymphocytes (TILs). These are lymphocytes that already recognize tumor cells, but see them as “self-antigens” and therefore refrain from attacking them. Our research focuses on reactivating TILs with interleukin-15 (IL-15), which will lead to cytotoxic targeting of cancer cells throughout the body. This could help treat metastasized cancers, even ones that have already spread to multiple organs. In previous experiments, B16 mouse melanoma cells were transfected with codon optimized IL-15 constructs (‘optimized B16 cell line’) specifically designed to enhance IL-15 protein production. Primers were also developed for the identification of transfected cells and the quantification of IL-15 mRNA. Optimized B16 cell lines were grown, lysed, extracted of RNA and protein, and compared to B16 cell lines without the construct for IL-15 RNA and protein levels. Quantitative, reverse-transcription PCR demonstrated that the optimized B16 cell line was carrying and expressing our optimized construct. Sandwich ELISA analysis showed a slight increase in IL-15 protein levels in the optimized B16 cell lines, but not to a level expected based on prior predictions. We hypothesize that optimization alone may not be sufficient to increase IL-15 to a therapeutic level. Although research is ongoing, these results may one day aid in the development of a melanoma cancer vaccine.

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Category: Clinical Vignette

School: Central Michigan University School of Medicine

Clerkship Director: Patricia Dhar, MD, FACP

Presenter: Priya Nathala

Additional Authors: DAVID L. STOCKMAN, MD

Von Hippel-Lindau Syndrome: Report of a Case and Review of Literature

We report a case of a patient affected by Von Hippel-Lindau (VHL) Syndrome presenting with a cerebellar hemangioblastoma with both germline and somatic mutations in VHL. A 38-year old woman presented with seizures, confusion, and progressively worsening gait ataxia of 5 month duration. Intracranial pressure was shown to be increased. Imaging studies revealed a 2.1 cm posterior fossa mass described as a cyst and enhancing mural nodule within the left lobe of the cerebellum. The lesion was completely resected and pathology revealed a vascular and reticular appearing proliferation of tumor cells showing cytoplasmic vacuolation. Tumor cells showed immunohistochemical phenotypic expression of inhibin, CD31, and CD34 consistent with the diagnosis of hemangioblastoma. Both tumor tissue and normal tissue from the patient were submitted for Next Generation Sequencing which revealed consistent germline and somatic mutations of VHL. The patient continues to be monitored for the development of other tumors associated with Von Hippel-Lindau (VHL) Syndrome. The patient is 36 months post-surgery and has shown no evidence or recurrent or new disease.

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Category: Research

School: Central Michigan University School of Medicine

Clerkship Director: Patricia Dhar, MD, FACP

Presenter: Neilesh Parikh

Additional Authors: Tyler Trahan, Joe Nowatzke

Cancer Knowledge and Disparities Within Michigan

Purpose: Early cancer screening has contributed to the recent reduction in cancer mortality. Though cancer screening guidelines have evolved to outline the best standard of care, screening is currently being underutilized- we hypothesize that a component of this is due to patient under-education. To capture the variety of factors that influence patient knowledge, we administered questionnaires and conducted educational interventions on current cancer screening guidelines, all throughout the geographically diverse state of Michigan.

Methods: An anonymous ten-question primary survey was adopted and amended with permission from the Johns Hopkins Center to Reduce Cancer Disparities. Subsequently, a co-investigator reviewed the answers to the primary survey with the participant, while emphasizing key concepts. A follow-up survey was conducted to consenting participants 30-90 days after administration of the primary survey and educational intervention.

Results: Primary survey data showed no statistically significant difference in score between urban and rural populations (73.5 ± 13.0 vs. 72.9 ± 14.1 , $p=0.732$). Follow up surveys showed 78% of contacted participants indicated they feel more informed and prepared to make a decision regarding cancer screening following the educational intervention.

Conclusion: There was no statistically significant difference in cancer screening knowledge between urban and rural populations. The one-on-one educational intervention was effective in increasing participants' ability to make informed decisions regarding cancer screening and increase conversations with their primary care physicians. Continued education of community members is therefore encouraged, and further studies are warranted to investigate the geographical disparities in cancer screening incidence.

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Category: Clinical Vignette

School: Central Michigan University School of Medicine

Clerkship Director: Patricia Dhar, MD, FACP

Presenter: Rebecca Theisen

Additional Authors:

Rothia Mucilaginosa Bacteremia in a Patient with Cardiac Valve Replacement and Pacemaker Implant

Introduction:

Rothia mucilaginosa is a Gram-positive coccus appearing in pairs or clusters on Gram stain. *Rothia* species are native to the upper respiratory tract and oropharynx, and have recently been described as opportunistic pathogens; notably in immunocompromised hosts with prosthetic devices in place.

Case Description:

An 89-year-old female with a medical history including COPD, hyperlipidemia, and atrial fibrillation status-post pacemaker placement with generator change in 2015, and prosthetic mitral valve placement, presented to the hospital with a three-day history of acute, non-productive cough. She was found to be tachycardic, tachypneic, and had an oxygen saturation of 90%. Initial labs showed leukocytosis of 12.5. Rapid influenza and respiratory viral panel tests were negative. Her physical exam was notable for rales over the right anterior chest wall and posterior right lower lung field. She was admitted for clinical suspicion of pneumonia despite a negative chest x-ray, and initially treated with ceftriaxone and azithromycin.

One of two blood cultures grew *Rothia mucilaginosa*. Azithromycin was discontinued, as *Rothia* isolates were uniformly susceptible to ceftriaxone alone. The patient improved clinically and was discharged after eight days. Recommended home care included a five-day course of cefuroxime and follow-up with repeat cultures.

Discussion:

While the source of infection was uncertain in this patient, her apparent transient bacteremia supports increased consideration of *Rothia* as a pathogen in immunocompromised patients with prosthetic devices. Device removal has been implied as a key component of successful treatment, but was not necessary in this patient; ergo, proper management remains unclear.

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Category: Clinical Vignette

School: Central Michigan University School of Medicine

Clerkship Director: Patricia Dhar, MD, FACP

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Additional Authors: Jill Paveglio, MD; Juliette Perzhinsky, MD, MS

The Sly in Roux-en-Y

A 44-year-old woman presented to her primary care physician (PCP) after an ER visit for a >1 week history of diffuse abdominal pain most severe in the lower right quadrant. She complained of nausea and constipation, although she was having bowel movements. The patient has a history of type 2 diabetes mellitus, hypertension, diabetic gastroparesis, and obesity. Her surgical history is significant for Roux-en-Y gastric bypass one and a half years prior and a laparoscopic cholecystectomy. Since the gastric bypass, she has had 87% excess weight loss. Physical exam revealed a soft non-distended abdomen with positive bowel sounds in all quadrants and guarding without rebound tenderness. Imaging and lab testing were unremarkable. During the following weeks, she maintained close follow-up with her PCP and surgeon and was treated with stool softeners, dicyclomine, and ketoralac without improvement. Due to the persistence of her symptoms, she ultimately underwent an exploratory laparoscopy and was found to have an internal hernia between the Roux limb and the transverse mesocolon, also known as Peterson's hernia. Surgical correction of the hernia was performed and the patient recovered fully.

In the US, the prevalence of Peterson's hernia is 4.5% following Roux-en-Y gastric bypass. This case highlights the importance of educating patients on all inherent risks of gastric bypass, including hernia. It is important to maintain a high index of suspicion for internal hernia in patients presenting with diffuse abdominal pain with a prior history of gastric bypass, along with having a low threshold for exploratory laparotomy.

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Category: Clinical Vignette

School: Central Michigan University School of Medicine

Clerkship Director: Patricia Dhar, MD, FACP

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Cellulitis as the Initial Presentation of Inguinal Squamous Cell Carcinoma

INTRODUCTION: Lymphedema cellulitis is an uncommon presentation of cellulitis. Stagnant lymph creates an opportune environment for bacterial growth. Examination of proximal lymph nodes could reveal the etiology, such as surgical removal of the lymph nodes, or in this case, blockage of the nodes by a pathologic process.

CASE PRESENTATION: A 55-year-old male was admitted for right lower extremity swelling and diffuse tenderness, from the inguinal region to the medial malleolus. There was also marked edema, induration, and erythema of the right lower extremity. The right inguinal region was significant for a 10x6 cm firm, immobile mass superior to the inguinal line, and another 10x10 cm firm immobile mass inferior to the inguinal line. The CT scan of the abdomen and pelvis also indicated lymphadenopathy in the retroperitoneum. The patient was treated with vancomycin for cellulitis, which improved the erythema and pain. However, the right lower extremity remained edematous. An excisional biopsy of the inguinal lymph nodes grew *Streptococcus dysgalactiae*. The pathology report revealed metastatic squamous cell carcinoma. Chromosomal analysis of the specimen suggested an aggressive disease state significant for an adverse prognostic marker.

CONCLUSION: Lymph must circulate in order for the immune system to function properly in the areas distal to the nodes. Lymphedema can be the first presenting sign of a much more serious pathologic process.

This case exemplifies an atypical presentation of cellulitis that uncovered an unlikely underlying diagnosis that is crucial to the patient's treatment and prognosis.

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Category: Clinical Vignette

School: Damascus University School of Medicine

Clerkship Director: Ahmad Sawah M.D.

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Additional Authors:

New-Onset Diabetes in Sickle Cell Disease Patient

29 years old patient presented with fatigue, polyuria, and polydipsia for 4 days. A day later, she developed blurred vision. She denied weight loss, fever, chills, dysuria, or abdominal pain. Her past medical history is significant for Sickle Cell Disease diagnosed in childhood. Her last admission with sickle cell crisis was 15 days ago in a nearby facility. Her medications are Folic Acid and Hydromorphone.

Initial Labs showed hyperglycemia, A1C 5.8%, elevated GADA, normal levels of C-peptide, electrolytes, and arterial blood gasses.

The patient with hyperglycemia but no ketosis. She was started on low dose of SQ Insulin. Metformin was started later upon discharge. Iron study was ordered upon follow up in the clinic. Self-monitoring Blood Glucose in follow-up visit showed very good blood glucose level except for occasional hypoglycemia pre-lunch. Aspart insulin dose was adjusted. Continuous Glucose Monitoring on the next visit showed excellent blood glucose control. A trial of insulin withdrawal for 2 days was given.

During two days of Insulin Withdrawal, Self-monitoring Blood Glucose Log on showed euglycemic level mostly, but post-prandial hyperglycemia.

Surprisingly labs showed normal GADA level, beside normal C-peptide. Patient has good endogenous insulin secretion to prevent ketosis as well as to maintain euglycemia to some extent, but not enough to prevent postprandial glycemc rise.

This case may demonstrate another potential etiology of Type 1 Diabetes in patients with SCD. That may be due to pancreatic ischemic injury after the vaso-occlusive crisis which may expose B-cells to the immune system.

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Category: Research

School: Dow University of Health Sciences

Clerkship Director: Teena Chopra, MD

Presenter: Aleena Saleem

Additional Authors: B Navalkele, P Viridi, A Krishna, A Kadappa, S Kompella, M Kaur, T Mishra, K Kaye, T Chopra

Assessing the Risk Factors for Surgical Site Infections in Neurosurgery Patients: A Case-Control Study

Neurosurgical site infections (NSSIs), although constitute small percentage of healthcare associated infections, are associated with higher healthcare expenditures and poor surgical outcomes. This study explores the risk factors for development of NSSIs.

A retrospective unmatched case-control study was performed at Detroit Medical Center from 2011 to 2014. Adult patients who underwent neurosurgeries, except ventriculoperitoneal shunts, were included. Patients with SSIs and without SSIs were categorized into cases and controls. Outcomes assessed were length of stay, in-hospital mortality and 30-day re-admission. A bivariate analysis was performed between cases and controls.

During the study, 64 patients developed NSSIs; 36% were craniotomies, 22% had severe sepsis, and 53% had organ space infection. Of the 61% gram positive infections, *Staphylococcus aureus*, *Enterococcus* and *Staphylococcus epidermidis* were most common. A total of 143 patients (64 NSSIs vs. 79 Neurosurgeries without infection) were included in the case-control study. Overall, mean age was 53.5 ± 15.5 years. Female gender ($p=0.007$) and admission from home ($p < 0.0001$) were protective against NSSIs. Presence of CHF ($p=0.04$), CKD ($p=0.03$), prior healthcare exposure ($p < 0.0001$) and redo surgeries ($p=0.001$) increased the risk for SSIs. No difference in mortality was seen ($p=0.08$). Patients with NSSIs had longer hospital stay and higher readmission rate.

Neurosurgery patients with non-modifiable risk factors have increased predisposition to develop SSIs. Stringent use of SSI prevention measures is advised during neurosurgical intervention in high risk patients.

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Category: CQI

School: Government Medical College, Amritsar

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Additional Authors: A Krishna, A Saleem, T Mishra, M Kaur, B Navalkele, J Moshos, E Flanagan, T Chopra

Surgical Site Infections Following Robotic Assisted Arthroplasty: A Single Center Experience

Background and objectives:

Robotic assisted arthroplasty [RAA] is increasingly being performed to reduce surgical errors associated with conventional arthroplasty. Due to the increased rates of surgical site infections [SSIs] following RAA at our center, we evaluated potential factors playing a role in increased risk for developing SSI and the efficacy of various interventions to reduce SSI rates.

Methods:

A retrospective study was conducted at Detroit Medical Center in RAA patients from November 2014 to November 2016. We collected and analyzed patient demographics, comorbidities and surgical details, calculated and compared SSI rates for each year and noted the timeline of the implemented interventions.

Results:

Of total 994 RAAs, 16 patients developed SSIs. Median age of the cohort was 64 years and 68.7% were male. 10 patients had methicillin-sensitive *Staphylococcus aureus* [MSSA] and 3 had methicillin-resistant *Staphylococcus aureus* [MRSA] infection. Inappropriate timing of antibiotic prophylaxis in 5 cases lead to 2 MSSA infections. None of the implemented interventions including chlorhexidine bathing, nasal decolonization and perioperative auditing were effective in reducing SSI rates.

Conclusions:

We conclude, patients who develop SSI following RAA frequently have conventional SSI risk factors and attention to modifiable risk factors such as duration of surgery, timing of antibiotic therapy and meticulous postoperative care might be beneficial. Larger multicenter data is needed.

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Category: Clinical Vignette

School: Michigan State University - College of Human Medicine

Clerkship Director: Churlson Han, MD, ACP Member

Presenter: Aaron Nichols

Additional Authors: Dr. Gurpreet Chahal, MD

Managing Complications of Acute Pancreatitis

Infected pancreatic necrosis, a potential complication of acute pancreatitis, is the leading cause of morbidity and mortality in acute necrotizing pancreatitis. As such, properly managing and treating this condition is paramount.

A 41 year-old man with a history of alcohol abuse and several bouts of acute pancreatitis presented to the Emergency Department with severe, sharp, epigastric abdominal pain, nausea, and vomiting of 1 day duration. Physical exam and lipase lab findings helped confirm the diagnosis of acute pancreatitis. At this time, the patient was made started on intravenous fluids, made NPO, and treated with morphine for pain. A CT abdomen-pelvis was ordered in the ER which showed severe pancreatitis with some evidence of pancreatic necrosis at the head of the pancreas. This necrosis was not seen on imaging during patient's previous episode of acute pancreatitis 4 months prior. Because the patient was clinically stable at this time, he was started on Meropenem empirically, advancing his diet as tolerated, and monitored closely in the hospital for signs of deterioration indicating infection. After several days in the hospital without complications, the patient was eventually discharged home.

This case illustrates proper, prompt management and treatment of acute necrotizing pancreatitis. Recent literature suggests that up to approximately one-third of patients with acute pancreatitis develop infected necrosis. Because of the high associated morbidity and mortality with infection, prompt recognition and empiric antibiotic treatment of pancreatic necrosis is essential for improving clinical outcomes and preventing further complications.

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Category: Research

School: Michigan State University - College of Human Medicine

Clerkship Director: Churlson Han, MD, ACP Member

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Persistent Upward Gaze in Coma Patients and Its Prognostic Implications

Factors associated with poor outcome after hypoxic-anoxic coma continue to be extensively studied, however literature is sparse regarding the prognostic importance of sustained vertical gaze. Four patients were followed up after hypoxic-anoxic coma (Glasgow Coma Scale of < 5). Daily neuro-ophthalmological examinations (specific attention to pupils, spontaneous and reflex eye movements) were conducted. CT and EEGs were performed; the tendon response was exaggerated and all patients remained comatose with no sign of arousal elicited. EEG responses indicated moderate to severe encephalopathy of non-specific etiology while CT appeared normal with no evidence of acute damage. However, the pattern of ocular deviations did not follow any particular pattern; we noticed that the appearance of vertical eye deviation was associated with poor prognosis. Our results suggest the sustained upward gaze invariably heralds the downward spiral of the patient's clinical outcome, resulting in death.

We propose this be referred to as "Sun Rise Sign " and suggest it be used in addition to other clinical parameters to establish a prognostic timeline for patients to enable neurologists to appropriately modulate their expectations regarding final patient outcome. Upward gaze is affected far more frequently than downward gaze because some of the fibers sub-serving up gaze cross rostrally and posteriorly between the riMLF and INC nuclei and are subject to interruption before descending to the oculomotor nuclei, whereas the pathways for the down gaze apparently project directly downward from the two controlling nuclei. When Sun Rise Sign is observed in a comatose patient, it is quite telling.

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Category: Research

School: Michigan State University - College of Human Medicine

Clerkship Director: Churlson Han, MD, ACP Member

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The Impact of Early TEG Directed Therapy in Trauma Resuscitation

Background: Conventional coagulation tests do not provide an accurate representation of the complex nature of trauma induced coagulopathy (TIC). Thromboelastography (TEG) provides a prompt global overview of all dynamic sequential aspects of TIC. The objective of this study was to evaluate the impact of using TEG on blood products utilization, crystalloids utilization, hospital, and ICU length of stay (LOS), and cost savings.

Methods: We retrospectively reviewed 134 patients (May of 2012 to February of 2015) meeting Class I trauma activation. Outcome data was compared between two groups: patients prior to TEG implementation (preTEG) and patients with TEG guided trauma resuscitation (postTEG). Blood product usage was compared for three time periods: first 4 hours, next 20 hours, and first 24 hours.

Results: For the first 24 hours of treatment, patients in the postTEG group (n=47) had lower PRBC (p=0.0022) and FFP (p=0.0474), but higher PLs (p=0.0476) utilization when compared to the preTEG group (n=87). There was no statistical significant difference in crystalloids use for any of the three time intervals. Patients in the postTEG group were found to have a shorter hospital LOS (p=0.0011) and ICU LOS (p=0.0059) than the patients in the preTEG group. Cost savings in blood products transfusion were most pronounced in patients with penetrating injuries.

Conclusion: This study demonstrates that TEG guided trauma resuscitation decreases the overall transfusion requirements of PRBC and FFP. The utilization of TEG corresponded to a reduction in hospital LOS, ICU LOS and cost of transfused blood products.

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Category: Clinical Vignette

School: Michigan State University - College of Human Medicine

Clerkship Director: Churlson Han, MD, ACP Member

Presenter: Bryanne Standifer

Additional Authors: Muhammad Ahsan, MD

Utility of Ordering Urinary Eosinophils in Diagnosing Acute Allergic Interstitial Nephritis

Acute interstitial nephritis (AIN) is an immune mediated tubulointerstitial injury leading to AKI and CKD/ ESRD. This condition is known to be triggered by medications, which include antibiotics, NSAIDs, diuretics, and proton pump inhibitors. Patients with AIN often present with non-specific symptoms as well as oliguria, fever, rash and arthralgias. Urinary eosinophils are commonly ordered in hospitals during the evaluation of patients with AKI

A 71-year-old AAF with an ischemic cardiomyopathy presented with dyspnea three weeks prior to the development of AKI and was treated symptomatically. Serum Creatinine (SCr.) was 0.9 mg/dl at that time. One week before admission she was given Azithromycin in the Emergency Department at which time SCr. was 1.6. She was admitted the following week with a SCr. of 4.3 mg/dl. She was afebrile with a nonproductive cough and no rash or urinary symptoms. The retroperitoneal ultrasound ruled out an obstruction and therefore, emergent dialysis was ordered. Further workup revealed a monoclonal gammopathy. The Kappa/Lambda ratio demonstrated a mild elevation seen with renal failure. A marrow was also negative for myeloma. Urinary eosinophils were negative using Wrights Stain. A renal biopsy was ordered and revealed AIN with scattered plasma cells and eosinophils.

AIN should still be considered despite negative eosinophil detection in urine sediment. Wright and Hansel stains used in the detection of urinary eosinophils have little diagnostic accuracy. Renal biopsy remains the gold standard in the diagnosis of AIN.

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Category: Clinical Vignette

School: Michigan State University - College of Osteopathic Medicine

Clerkship Director: Richard Thiede, MD, ACP Member

Presenter: Chih-Yang (Michael) Juan

Additional Authors: Michael Warren, MD, Brian J Puzsar, MD

A Bubbly Surprise – A Rare Case of Emphysematous Pyelonephritis with Nephrolithiasis in an Otherwise Healthy Young Woman

Emphysematous pyelonephritis (EPN) is an acute renal infection with an estimated mortality rate of 80%. As of 2014, there are only approximately 200 cases documented in the literature. Notably, observed in 80 – 90% of the cases, diabetes is the commonest comorbidity of EPN. Interestingly, herein we present a rare case of EPN with gas-containing renal stones in a normoglycemic individual. A 47-year-old woman, with no past medical history, presented with sudden onset left flank pain. Laboratory testing and urinalysis showed leukocytosis and gross urinary tract infection, respectively. Computed tomography (CT) of the abdomen and pelvis revealed left hydronephrosis, hydroureter, three large gas-containing calcifications, and additional gas bubbles in the collecting system. Urine cultures were positive for *Escherichia coli* and *Aerococcus urinae*. Following percutaneous drainage and nephrostomy tube placement, the stones were eventually treated using percutaneous nephrolithotripsy and were found to compose of calcium oxalate monohydrate (20%), amorphous carbonated calcium phosphate (20%), and protein (40%). Although virtually all reported cases of EPN occur in diabetic, immunocompromised or chronically ill patients, the present case critically demonstrates the possibility of such a potentially devastating disease even in a relatively healthy young person. If detected early through appropriate CT imaging, EPN is amenable to conservative management, which is recommended over nephrectomy. Finally, as underscored by the current report, clinical suspicion must be raised for EPN not only in the typical diabetic population, but even more importantly, in healthy young individuals to avoid potentially serious and fatal complications.

Poster: 18

Category: CQI

School: Michigan State University - College of Osteopathic Medicine

Clerkship Director: Richard Thiede, MD, ACP Member

Presenter: Anna Shu

Additional Authors: Sarah Bonner, DO; Anupam Suneja, MD; Danielle Bickle, Tucker Billups, Charlotte Bourdillon

Communication on Internal Medicine Rounds: Going Beyond Dr. House

Introduction:

Communication models from Shannon-Weaver's transmission model to advanced patient-centered models are dependent on basic communication skills (BCS). Positive provider-patient interaction has been shown to improve satisfaction and clinical outcomes. Our objective was to study the effect of audit and feedback on use of BCS by rounding teams.

Methods:

Prospective QI project with audit by 'secret shopper' medical students on inpatient rounding teams in August, 2016. The intervention was feedback about group performance provided to all the rounding teams by two investigators. Pre-intervention was compared to post-intervention data using chi-square.

Results:

Of 231 observations, 118 were pre-intervention and 95 were post intervention. Attending physicians were the primary communicators at 44% pre-intervention versus 63.1% post intervention (Pearson chi-square $P=0.006$). Introducing themselves to others in room increased from 52.6% to 61.7% ($P=0.435$) post-intervention, while smiling at least once decreased from 87.2% to 73.6% ($P=0.012$). 95.4% of teams introduced themselves on day 1, while 41.1% of teams introduced themselves from day 2 onwards.

Discussion:

Surprisingly, a large portion of the conversation was carried out by the attending physicians, which worsened post feedback. Introduction to others in room improved post-intervention, while smiling during conversation went down. While most teams introduced themselves on day1, most teams did not do that from day 2 onwards. Our study provides a 'secret shoppers' view of rounds on Internal Medicine teams and identifies multiple opportunities for improvement. However, providing feedback does not appear as a robust intervention to improve these behaviors.

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Category: Research

School: Michigan State University - College of Osteopathic Medicine

Clerkship Director: Richard Thiede, MD, ACP Member

Presenter: Stela Tereziu

Additional Authors: Jeremy Weleff, Jelena Arnautovic D.O; Richard Bryce D.O; William Corser Ph.D.

Characteristics of Homeless Adults Presenting with Acute and Chronic Pain in Detroit, Michigan: A Retrospective Chart Review

Introduction:

In the Detroit Metropolitan Area there are over sixteen thousand homeless people with little epidemiological data concerning the prevalence of common medical condition. Pain is a commonly encountered chief complaint, so to adequately address the healthcare needs, data regarding this topic are necessary. This study examines factors related to homeless patient presenting with a pain related complaint.

Methods:

Electronic and paper records of homeless adults receiving care at Tumaani center in Detroit, Michigan between October 2nd, 2015 and May 27th, 2016 were reviewed (n=277). A series of non-parametric stepwise binary logistic regression predictive models were completed with patient records containing complete pertinent data.

Results:

101 (36.5%) of the total sample had a chief complaint of acute or chronic pain. Acute/chronic pain chief complaint was significantly correlated with: a) whether patient had come in for an acute or chronic care (Pearson correlation – 0.201, p = 0.001), b) patient age category (Pearson correlation – 0.142, p = 0.018), and c) patient racial affiliation (Pearson correlation + 0.168, p = 0.005). Patients who possessed more major documented health conditions, were older, and/or had pain as chief complaint were more likely come in for a chronic-type healthcare encounter.

Conclusion:

Healthcare providers to this population should ensure adequate pain management strategies due to the high clinic use due to pain. Tailoring resources that focus on the current most prevalent diagnoses in the outpatient clinical settings, may improve patient care that is often lacking within the homeless and decrease frequent ED visits and hospitalizations.

Poster: 20

Category: Clinical Vignette

School: Michigan State University - College of Osteopathic Medicine

Clerkship Director: Richard Thiede, MD, ACP Member

Presenter: Jeremy Weleff

Additional Authors: Kyle Kondrat, Dr. Melissa Lee, Dr. Christopher Whitty, Dr. Jonathan Lovy

Globus Pallidi Lesions and Subacute Cord Degeneration in a Patient with Profound Ataxia Secondary to Vitamin B12 Deficiency

Objective: To describe a classic case presentation of vitamin B12 deficiency with rare clinical features and rare radiographic features

Case Description: A 40-year old patient presented with profound, progressive ataxia and distal sensory loss in all four extremities. Two months prior, the patient began experiencing progressive loss of ability to perform activities of daily living, notably using tweezers, showering, and driving, because of proprioceptive and sensory loss starting in her fingers and toes. She had no history of diabetes, and no history of alcohol or substance abuse. Laboratory work up revealed a low serum B12 levels (128pg/mL), with normal folate levels (11.7ng/mL). There was no evidence of anemia (Hgb 14.1) or pancytopenia and her mean corpuscular volume was within the normal range (96.8). Methylmalonic acid levels were increased (4.80 umol/L, normal \leq 0.4umol/L). Brain magnetic resonance imaging showed subacute combined degeneration of the spinal cord and signal abnormality in the globus palladi, with notable signal abnormality of the dorsal columns extending from the craniocervical junction to T10. As for the cause of her vitamin B12 deficiency, further testing for pernicious anemia revealed a negative intrinsic factor antibody and negative parietal cell antibody. Although she has no formal dietary restrictions, like veganism, her history was significant for a two year history of poorly managed severe depression characterized by extended periods where she would go with little to no food. Although rare but known to mimic signs and symptoms of B12 deficiency, plasma ceruloplasmin levels were checked and found to be normal.

Poster: 21

Category: Research

School: Oakland University William Beaumont School of Medicine

Clerkship Director: Lynda Misra, DO, MEd, FACP

Presenter: Mohammed Ahmed

Additional Authors: Kavitha Chinnaiyan, M.D.

Coronary CT Angiography in the Evaluation of Acute Chest Pain: A 5-Year Cardiovascular Outcome Study

Introduction

Coronary CT angiography (CTA) is an excellent tool for triage of low-to-intermediate risk patients presenting to the emergency department (ED) with acute chest pain. Although it is useful for real-time triage of such patients, few data exist regarding long-term outcomes of such an approach.

Methods

Patients presenting to the ED with acute chest pain and undergoing coronary CTA, with at least 5-year follow-up data were identified from the Beaumont CT registry. Demographics, CTA findings and downstream clinical outcomes including all-cause mortality, acute coronary syndrome (ACS), and revascularization were evaluated.

Results

Ninety-seven patients (mean age, 51 years \pm 11) were identified. Cardiovascular risk factors included hypertension in 42.2% of patients, diabetes in 9.3%, current smoking in 23.6%, and hyperlipidemia in 43.8%. Sixty-four patients (66.0%) had no coronary stenosis, 12(12.4%) had mild stenosis (1-25%), 14(14.4%) had moderate stenosis (26-70%), 6(6.2%) had severe stenosis (71-99%), and 1(1.0%) had complete occlusion. At 5-year follow-up, 6 patients (6.2%) died, 2 with no stenosis, 2 with mild, and 2 with severe. Four patients were revascularized, 3 with severe stenosis, 2 of whom died, and 1 with complete occlusion. There were no revascularizations in any patients with less than 70% coronary stenosis. Across all categories, there were no instances of ACS.

Conclusion

Coronary CTA work-up for acute chest pain carries a safe long-term cardiac outcome profile, seen in 95.6% of patients in this study with <70% coronary stenosis. The rates of mortality and revascularization after 5 years, were lower in this group relative to patients with >70% stenosis.

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Category: Clinical Vignette

School: Oakland University William Beaumont School of Medicine

Clerkship Director: Lynda Misra, DO, MEd, FACP

Presenter: Sinan Albear

Additional Authors: Sarah Corral, Esther Zekman, DO

Early Recognition to Prevent Complications of Mycosis Fungoides

Mycosis fungoides (MF) and its leukemic variant, Sezary syndrome (SS), are rare types of Cutaneous T Cell Lymphoma (CTCL) that typically take an indolent course. Early diagnosis offers better prognosis and remission, with relapse expected, since there is currently no cure for CTCL.

A 45 year old woman with no significant medical history found to have calcifications in her right breast on mammogram. At 48, her second mammogram showed additional calcifications. Within three months, a mass was found and a biopsy revealed ER/PR positive, HER2 negative, ductal carcinoma in-situ. She underwent right partial mastectomy and received chemoradiation. A year after starting tamoxifen, she experienced right breast erythema. Follow-up MRI showed slightly thickened breast tissue consistent with radiation therapy. Testing to rule out alternative explanations was negative including: chronic urticaria index, ANA, ESR, C4 and C3. She presented later with a rash involving lower back, wrists and shoulders. Subsequent biopsies of these locations were suspicious for MF. Patient progressed to SS and was not a candidate for bone marrow transplantation. Testing for common familial cancer syndromes was negative.

Reactive/allergic skin rashes occur frequently with chemotherapy. However, it is important to consider CTCL in the differential due to lengthy diagnostic process (requiring multiple skin biopsies sometimes) and the good prognosis in early stages. Epidemiological studies have failed to consistently identify environmental or virally associated risk factors for CTCL, with the exception of HTLV-1 infection. Further reports will help investigate the link between chemoradiation of the breast and development of CTCL.

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Category: Clinical Vignette

School: Oakland University William Beaumont School of Medicine

Clerkship Director: Lynda Misra, DO, MEd, FACP

Presenter: Sinan Albear

Additional Authors: Lynn Shaouni, B.A., BSN

Genetic Involvement in a Rare Type of Visceral Aneurysm

Spontaneous celiac artery aneurysm (CAA) in the absence of aortic aneurysm is rare and should be considered in the differential diagnosis of unexplained epigastric pain. It is most often asymptomatic and usually diagnosed at autopsy.

A 37 year old art professor female presented with 4 days of sudden onset epigastric pain. Her past medical, social and surgical history were unremarkable, with the exception of two cesarean sections and a 4 pack/year smoking history. Family history was significant for splenic and aortic artery dissection in her mother at the age of 66. Her physical exam was only remarkable for epigastric and left upper quadrant tenderness. Hepatic, pancreatic and renal function testing was normal. A CT abdomen/pelvis raised suspicion for celiac artery dissection and mild aneurysm. These findings were confirmed with abdominal CT angiography that also showed partial thrombosis of the proximal false lumen. Conservative management was recommended with dual antiplatelet therapy. Additionally, pursuing genetic workup for connective tissue disorders was recommended.

There is no definitive proof that surgical management works better than conservative management in isolated CAA. Endovascular management would be necessary in hemodynamic instability, persistent abdominal pain, or dissection progression. Predisposing factors include hypertension, pre-existing vascular disease, pregnancy, microtrauma (e.g exertion, sneezing, or lifting). Other reported risk factors include cystic medial necrosis, abdominal aortic aneurysm, fibromuscular dysplasia, and connective tissue disorders. In our patient, rule out of connective tissue disorders was important and only triggered after learning her family history which tend to be ignored frequently.

Poster: 24

Category: Research

School: Oakland University William Beaumont School of Medicine

Clerkship Director: Lynda Misra, DO, MEd, FACP

Presenter: Jonathan Chao

Additional Authors: Janice Campbell, PhD; Ching-Yee Wong, MD, PhD

Evaluation of Metastatic Thyroid Cancer Patient Dosimetry with Recombinant Human TSH Stimulation Versus Hormone Withdrawal

INTRODUCTION

The standard treatment for patients diagnosed with differentiated thyroid carcinoma is total thyroidectomy and thyroid ablation with radioactive ¹³¹I therapy after thyroid hormone withdrawal (THW). A recent alternative to THW is administration of recombinant human TSH (rhTSH). The goal of this study is to evaluate the differences in quantitative dosimetric parameters between patients undergoing THW versus rhTSH.

METHODS

With investigational board approval, 110 patient medical records from January 2011 to February 2016 were retrospectively reviewed. This included patients age 18 years or older, diagnosed with metastatic thyroid cancer, and receiving preparation with rhTSH or THW. Some dosimetric variables included effective total body half-life and dose for 200cGy to blood. Statistical analysis was used to evaluate an association between the dosimetric parameters calculated based on each preparation method.

RESULTS

Of the 110 patients mean age 61 years (median 63, range 19-94), 53 were female and 57 were male. 76 patients were prepared by THW while 34 received rhTSH. Effective total body half-life varied from 0.5 to 3.9, median of 1.1 days. Range of dose for 200cGy to blood was 94-970, median 313mCi. Two-tailed T-test showed no significant difference in any dosimetric parameter between THW as compared to rhTSH (lowest $p=0.57$).

CONCLUSION

The use of rhTSH allows for effective dosimetry and treatment of thyroid remnants without the side effects of becoming clinically hypothyroid. This evaluation between the THW and rhTSH preparation identified no significant differences that would indicate a dosimetric reason for use of either two methods of TSH stimulation.

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Category: Clinical Vignette

School: Oakland University William Beaumont School of Medicine

Clerkship Director: Lynda Misra, DO, MEd, FACP

Presenter: Jonathan Chao

Additional Authors: Arati Kelekar, MD

Transient Multifocal Deficits: An Atypical Presentation of Dementia with Lewy Bodies

INTRODUCTION

Dementia with Lewy bodies (DLB) is a condition that overlaps with other degenerative dementias. The core clinical features of DLB can be variable in their presentations, making the diagnosis of this entity difficult.

CASE

A 78-year-old male with no known cognitive impairment presented with multiple episodes of generalized weakness, facial droop, and transient fluctuating blood pressures raised concern for transient ischemic attacks (TIA). He denied loss of consciousness, visual changes, or aphasia. A head and neck MRI was unremarkable except for chronic ischemic white matter changes. Ultrasound of his carotids and vertebrobasilar system were unremarkable. Telemetry and 2D echocardiogram revealed no cardiac abnormalities. Upon the next admission, the patient presented with declining mobility, visual hallucinations, worsening delirium in the evenings, and transient episodes of confusion. He was alert and oriented with clear speech on neurological exam, but he was noted to have a shuffling gait. A video EEG showed slowing and frontal intermittent rhythmic delta activity that was consistent with a diffuse encephalopathic process. The constellation of his findings – rapidly progressing dementia with fluctuating cognition, visual hallucinations and dream enactment, features of parkinsonism, and autonomic instability – lead to a clinical diagnosis of DLB.

DISCUSSION

The rapid deterioration of this patient illustrates the progressive course of DLB. In this case, diagnosis was delayed due to a presentation confounded by recurrent TIA-like episodes. Accurate diagnosis often rests on the physician's scrutiny for a systematic approach and a low threshold of suspicion for DLB.

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Category: Research

School: Oakland University William Beaumont School of Medicine

Clerkship Director: Lynda Misra, DO, MEd, FACP

Presenter: Peter Chen

Additional Authors: Wendelin Dailey, Kenneth Mitton

Effects of Vascular Endothelial Growth Factor on Cell Signaling Pathways in Retinal Neovascularization Diseases

Introduction

Retinal neovascularization diseases currently impair vision in more than 9 million Americans. Elevated Vascular Endothelial Growth Factor A (VEGFA) drives neovascularization by activating the receptor VEGFR2, which activates the PI3K/AKT pathway to regulate cell survival, proliferation, and neovascularization. Currently, little is known about VEGFA's activation of AKT, a serine/threonine kinase, in primary human retinal endothelial cells (HRECs). We developed an in situ assay to elucidate the dose response of AKT activation from VEGFA-165 in HRECs.

Methods

Primary HRECs were cultured. Control groups were untreated, while experimental groups were treated with VEGFA-165. AKT activation was measured as the relative amount of phosphorylated-AKT. In situ immunofluorescence was performed using primary antibodies to phosphorylated-AKT and infrared-tagged secondary antibodies. Plates were scanned with a fluorescent laser scanner and fluorescent signals were recorded. Dose response curves were generated using R-project statistical software environment, and relative timing and kinetics of AKT activation was measured.

Results

Maximum activation of the AKT pathway, measured by phosphorylated-AKT, occurred at 30 minutes for VEGFA-165 treatment. Based on the dose response curves, the effective dose for VEGFA-165 was $51 \text{ pM} \pm 23 \text{ pM}$. The dose response curve for the AKT pathway also demonstrated a steep, pseudo-binary activation response.

Conclusion

Dose response curve results suggest that it may be difficult to titrate VEGFA levels in the human eye. This may lead to difficulty in treating retinal neovascularization diseases using current VEGF blockade or trapping drugs, which will result in either full activation or blockade of downstream signaling pathways within HRECs.

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Category: Clinical Vignette

School: Oakland University William Beaumont School of Medicine

Clerkship Director: Lynda Misra, DO, MEd, FACP

Presenter: Emman Dabaja

Additional Authors: Fatima Ali-Ahmed, MD, Romona Berghea, MD

Broken Heart Cardiomyopathy

Takotsubo cardiomyopathy is a syndrome characterized by transient left ventricular (LV) dysfunction without coronary artery disease. It is triggered by intense emotional and/or physical stress. Clinical presentation may vary from chest pain (CP) to sudden cardiac arrest.

A 65-year-old female presented to the clinic with a complaint of diffuse atypical CP after her landlord cut down her tree. She denied shortness of breath or palpitations. The patient appeared very angry with her landlord; she was tachycardic with a heart rate of 106 bpm. Physical exam revealed no JVD, normal S1/S2, no murmurs and breath sounds were clear bilaterally. Our main concern was anxiety-induced atypical CP with a rule out for acute coronary syndrome (ACS). Interestingly, EKG revealed T wave inversion in the anterolateral leads with troponins of 2.99 and a depressed ejection fraction (EF). The patient underwent an urgent cardiac catheterization revealing an EF of 10% with apical ballooning and non-ischemic cardiomyopathy, suggestive of takotsubo cardiomyopathy. The patient improved with furosemide, lisinopril, carvedilol and aldactone. One week later, her EF recovered.

Classic takotsubo cardiomyopathy is characterized by transient apical ballooning with a normal or hyperdynamic base. It is more likely to present with symptomatology and hemodynamic changes, compared to other variant forms of takotsubo. The mechanism is unknown, but catecholamine excess likely has a central role. Management includes standard heart failure medications and supportive care with resolution of physical and/or emotional stress. On presentation, it usually mimics ACS; therefore physicians should be aware of its distinguishing features, thus decreasing mortality.

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Category: Research

School: Oakland University William Beaumont School of Medicine

Clerkship Director: Lynda Misra, DO, MEd, FACP

Presenter: Austin Fan

Additional Authors: Kim A. Killinger, Judith A. Boura, Kenneth M. Peters

Neuromodulation for Chronic Urogenital Pain: A Comparison of Pudendal and Sacral Nerve Stimulation

Introduction: Little evidence exists regarding the effect of neuromodulation on urogenital pain. We evaluated outcomes between pudendal vs. sacral nerve neuromodulation.

Methods: Adults in our prospective database with primary/secondary diagnosis of pelvic pain (excluding interstitial cystitis) and undergoing pudendal or sacral neuromodulation were reviewed. History, pain scores, Interstitial Cystitis Symptom/Problem Index (ICSUPI) and Overactive Bladder symptom severity (OABq ss)/health related quality of life (HRQOL) measures were analyzed with descriptive statistics and repeated measures over 1 year.

Results Obtained: 87 had a lead placed; 72 (83%) had generator implantation. 37/65 that had complete baseline data had a pudendal (12/37 had failed sacral stimulation) and 28 had a sacral lead. Group characteristics were similar except for pudendal had fewer with primary urinary urgency/frequency (8.1% vs. 39.3%; $p=0.003$). Although a higher proportion of pudendal patients had a primary diagnosis of pelvic pain, this was not statistically significantly (62.2% vs. 38.5%; $p=0.06$). Median pelvic pain scores were similar between pudendal/sacral groups at baseline and each follow up, and both improved significantly over 1 year ($p=0.0003$ and $p<0.0001$). The pudendal group had lower ISCUPI and OABq/ss scores at baseline ($p=0.007$ and $p=0.035$, respectively), but both groups improved over 1 year on the ISCUPI ($p<0.0001$ for both groups), OABq/ss ($p=0.005$ and $p=0.0002$ respectively), and OABq HRQOL ($p=0.027$ and $p<0.0001$ respectively).

Conclusions: Sacral or pudendal neuromodulation can be considered for managing chronic pelvic pain since both groups experienced modest but similar improvements.

Funding: Philanthropy; Ministrelli Program for Urology Research and Education (MPURE)

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Category: CQI

School: Oakland University William Beaumont School of Medicine

Clerkship Director: Lynda Misra, DO, MEd, FACP

Presenter: Derrick Huang

Additional Authors: Janice Crabtree, Scott Kleiman, M.D.

Effects of Streamlining Consultation and Maintaining Hospital Bed Availability on Trauma Admission

INTRODUCTION

The proposal retrospectively analyzes if quality improvements, which streamlined physician consult placement and reserved two hospital beds in the clinical decision unit (CDU), effectively reduced components of Length of Stay (LOS) time for trauma patients in the emergency room (ER) at Beaumont Troy. This study seeks a simple and affordable means to reduce ER wait times.

METHODS

Data was retrospectively gathered from 907 patients from January 2015 to June 2016. Four time points were collected: Arrival to ER, Consultation, Admit Decision, and Departure from ER. Total LOS time is defined as: time from "Arrival to ER" to "Departure from ER." The communications intervention affects the time from "Arrival to ER" to "Consult Placed," whereas the bedding intervention affects the time from "Admit Decision" to "Departure from ER." The communications intervention was compared between January 2015 to June 2015 (pre-intervention) and July 2015 to June 2016 (post-intervention) while the bed intervention was compared between January 2015 to October 2015 (pre-intervention) and November 2015 to June 2016 (post-intervention). Multivariate linear regression analysis compared the differences between pre and post intervention groups, adjusting for patient population demographics.

RESULTS

The communication intervention decreased the adjusted average Arrival to Consultation Time from 109 minutes to 76 minutes (P-Value = 0.0015). The bed intervention decreased the adjusted average Admit Decision to Departure Time from 148 minutes to 79 minutes (P-Value = < 0.0001).

CONCLUSION

The results support the hypothesis that both interventions have independent effects on reducing LOS times for CDU trauma patients.

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Category: Research

School: Oakland University William Beaumont School of Medicine

Clerkship Director: Lynda Misra, DO, MEd, FACP

Presenter: Bashar Kazanji

Additional Authors:

Predictors of Active Extravasation During Mesenteric Angiography in Patients with Acute Gastrointestinal Hemorrhage

PURPOSE: While angiography with transcatheter embolization plays a crucial role in the management of active lower gastrointestinal (GI) hemorrhage, it is an invasive procedure with inherent risks and is best implemented in those patients with active hemorrhage at the time of the study. We sought to identify clinical and imaging factors associated with an increased likelihood of visualizing active extravasation at the time of angiography.

MATERIALS AND METHODS: 134 patients' medical records were retrospectively reviewed and predictor variables including age, sex, pulse, blood pressure, hemoglobin, presence of coagulopathy, antiplatelet or anticoagulation medications, units of packed red blood cells (PRBCs) transfused in 12 & 24 hours prior to angiography, tagged RBC scan results, and time interval from positive tagged RBC scan to angiography were examined.

RESULTS: 30 of the 134 patients (22.4%) had extravasation at angiography. Patients with active extravasation, however, had a lower diastolic blood pressure (BP) at the time of angiography (59.2 vs. 65.5 mmHg, $p=0.0373$), lower hemoglobin at the time of angiography (8.2 vs. 9.1 g/dL, $p=0.0089$), and a greater quantity of units of PRBCs transfused within 12 hours of angiography (1.20 units vs 0.64 units, $p=0.0455$).

CONCLUSION: Given its invasiveness, angiography with potential transcatheter embolization is best utilized in those patients with active GI hemorrhage. Our results suggest that the clinical status of the patient, as opposed to the results of or time interval from tagged RBC scan to angiography, may better dictate which patients with GI hemorrhage should be taken urgently to the angiography suite.

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Category: Research

School: Oakland University William Beaumont School of Medicine

Clerkship Director: Lynda Misra, DO, MEd, FACP

Presenter: Ivan Lee

Additional Authors: Dr. John Ko, M.D.

Prognostic Factors and Survival of Patients with Sebaceous Carcinoma of the Eyelid in the United States

Introduction: Eyelid sebaceous carcinoma is rare cutaneous tumor arising from excessive proliferation of sebaceous glands in the eyelid region. Due to its similar clinical presentation to other benign and malignant neoplasms around the eye, there has been a delay in diagnosis and proper treatment, resulting in poor prognosis. While there are some single institution reports, population data analysis on prognostic factors and survival analysis on the eyelid sebaceous carcinoma is lacking, which makes it difficult to draw valid conclusions despite the wealth of literature.

Methods: a retrospective, population based cohort study of 940 patients in the SEER registry diagnosed with the eyelid sebaceous carcinoma from 1973-2013 were reviewed. Epidemiologic characteristics and prognostic factors for survival in sebaceous carcinoma patients are investigated through univariate (Kaplan-Meier) and multivariate (Cox regression) analysis.

Results: Median (SE) overall survival was 9.4 (0.5) years. Survival did not change over the variable of sex, race, tumor grade or tumor extent ($P > .05$), while age, treatment modality, lymph node involvement, and tumor size affected overall survival ($P < .001$). In multivariate Cox Regression analysis, treatment modality ($P = .002$) and tumor size ($P < .001$) were independent prognostic factors.

Conclusion: We present the first and the largest study to date, investigating prognostic factors for survival in patients diagnosed with sebaceous carcinoma of the eyelid in the United States. We demonstrated that independent prognostic factors of overall survival include surgical treatment and tumor size greater than 20 cm.

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Category: Research

School: Oakland University William Beaumont School of Medicine

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Presenter: David Vinh-Phuc Nguyen

Additional Authors: Charles Shanley, MD. Samia Ragheb, PhD. Diane Studzinski, BS.

Immunohistochemical Analysis of Potential Biomarkers of Plaque Instability in Carotid Atherosclerosis Patients

Carotid atherosclerosis is characterized by hardening and narrowing of arteries due to fatty plaque formation on vascular endothelial cell walls. Chronic inflammation may cause the plaques to rupture, which increases the risk for embolic cerebrovascular events leading to stroke. The molecular mechanisms between the host immune system and plaque instability in atherosclerosis patients remain unclear. Specific peripheral blood biomarkers that can indicate whether or not a patient may be at risk for plaque instability would serve as a quick and cost-effective screening tool to determine the urgency of invasive vascular surgical interventions. Relative protein expression of pro-inflammatory and anti-inflammatory immune mediators were assessed in carotid arterial plaques from asymptomatic and symptomatic patients using immunofluorescence staining of paraffin-embedded sections. Commercially available anti-human monoclonal antibodies were used to detect IRAK3, GSK3a, STAT1, STAT6, TGF β , CXCL12, and CXCR4. Relative fluorescent marker expression will be normalized to the nuclear marker, DAPI, prior to applying an unpaired t-test to determine statistical significance between asymptomatic and symptomatic groups. Immunofluorescence staining and raw data collection for each respective antigen has been completed. The data are currently being analyzed and we predict there will be differences in pro-inflammatory and anti-inflammatory mediator expression between symptomatic and asymptomatic groups, which may suggest an unstable plaque phenotype. If this proves to be true, it would allow for the development of novel prognostic tools to identify carotid atherosclerosis patients who are at risk for plaque instability and stroke.

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Category: Research

School: Oakland University William Beaumont School of Medicine

Clerkship Director: Lynda Misra, DO, MEd, FACP

Presenter: Fred Qafiti

Additional Authors: Sangeeta Kaur MD, Ray Bahado-Singh MD MBA

Efficacy of a Risk-Assessment Model for Six-Week Postpartum Exam Non-Adherence

The aim of this study is to model the probability that a patient will return for her six-week postpartum visit in order to best identify at-risk patients. In a retrospective case-control study of 587 patients who received prenatal and perinatal care at Beaumont Hospital Royal Oak, seven variables were tested for correlation with patient adherence to the American Congress on Obstetrics and Gynecology (ACOG) guidelines (a wellness exam at 3-7 weeks postpartum). Variables that demonstrate significant ($p < .05$) odds ratios of postpartum exam adherence will be incorporated into a logistic regression model. The model will be cross-validated with an excluded subset of the data using receiver operating characteristic (ROC) curve analysis. Of 587 patients, 68.1% attended their postpartum visit within the timeframe recommended by ACOG. Initial analysis of the dataset shows that 5 of the 7 selected variables significantly correlate to a patient's return to the 6WPP exam: age older than 24.0 years at delivery, OR (95% CI) = 2.13 (1.39, 3.28), married = 1.95 (1.36, 2.80), Medicaid health insurance = 0.49 (0.33, 0.73), primiparity = 1.59 (1.10, 2.30), and gestational age greater than 16.0 weeks at the initial obstetric visit = 0.51 (0.36, 0.72). Two variables demonstrated no significant correlation to 6WPP exam adherence: Cesarean section = 0.92 (0.64, 1.30), and gestational age greater than 37 weeks at delivery = 0.59 (0.32, 1.07). These preliminary results provide a strong basis on which to develop a clinically applicable model.

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Category: Clinical Vignette

School: Oakland University William Beaumont School of Medicine

Clerkship Director: Lynda Misra, DO, MEd, FACP

Presenter: Eman Sahloul

Additional Authors: Fatima Ali-Ahmed, MD; Romona Berghea, MD

A True Surgical Emergency

Fournier's gangrene (FG) is a life-threatening, rapidly progressing (2-3cm/hr) polymicrobial necrotizing fasciitis affecting the perineal, perianal, and genital regions. If not recognized and treated early, it is associated with high morbidity and mortality. Patients often present with fever, perineal swelling, crepitus and pain out of portion.

A 76-year-old male with a history of end-stage renal disease on peritoneal dialysis presented with fevers and right lower quadrant (RLQ) pain. He was febrile but hemodynamically stable. Physical exam demonstrated RLQ tenderness, scrotal edema, erythema and significant tenderness. A CBC revealed leukocytosis. Concerned for peritonitis, the patient was placed on broad-spectrum antibiotics. Despite antibiotics and fluids, the patient became hypotensive and tachycardiac. A stat CT abdomen/pelvis demonstrated air in the mid inguinal canal highly suspicious for Fournier's gangrene. The patient was taken emergently to the OR for scrotal debridement. He was empirically treated with vancomycin, cefepime, flagyl and clindamycin. Tissue cultures grew *Enterococcus faecalis* and the patient was switched to ciprofloxacin and vancomycin. The patient made a completely recovery after multiple surgical debridement and a 21-day course of antibiotics.

FG is a surgical emergency with predisposing factors such as men with diabetes, cirrhosis, immunocompromise, and/or obesity. FG is generally a clinical diagnosis, with confirmatory imaging (CT abdomen/pelvis) demonstrating subcutaneous gas. The development and progression of FG is often fulminating and can rapidly cause multiple organ failure and death. Therefore, a high clinical suspicion, combined with early, aggressive surgical debridement and broad-spectrum antibiotics are essential in reducing potential complications and/or death.

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Category: CQI

School: Oakland University William Beaumont School of Medicine

Clerkship Director: Lynda Misra, DO, MEd, FACP

Presenter: Chanteil Ulatowski

Additional Authors: Dr. David Thomas

International Experience and Its Effect on Cultural Sensitivity Development in Medical Students

A study by Didion (2014) revealed that 18-21 year old students demonstrated less cultural sensitivity than older students due to lack of international experience. The median age of Oakland University William Beaumont School of Medicine (OUWB) students is approximately 25. The goal of this study was to measure the degree of cultural sensitivity among OUWB students and correlate this with the type and duration of their cross-cultural experiences.

This study examined cross-cultural experiences of M1-M4 OUWB students. Using Qualtrics, prospective participants were emailed a slightly modified, validated measure ("Promoting Cultural and Linguistic Competency: Self-Assessment Checklist for Personnel Providing Primary Health Care Services"), created by the National Center for Cultural Competence at Georgetown University. An OUWB biostatistician, analyzed respondents' assessments with the durations of their foreign visits using Kendall's tau-b and ANOVA.

62 OUWB medical students completed the voluntary survey. Using Kendall's tau-b and ANOVA, correlations between cultural sensitivity and cross-cultural experiences were examined. We found that students who traveled abroad for longer (>60 days), reported more cultural awareness of folk and religious influence on families' responses to medical care. We also determined that students who traveled abroad >60 days were more aware of specific health and mental disparities within certain ethnic groups.

International travel among OUWB medical students should be encouraged as it can promote the development of cultural sensitivity in future doctors. Future research can be conducted to see if programs implemented in medical school curricula have any effect on the development of cultural sensitivity among students.

Poster: 36

Category: Research

School: Ross University Medical School

Clerkship Director: Monica Nicola, MD

Presenter: Jaime Armah

Additional Authors: Mohanad Saleh, MD; Ila Shah-Reddy, MD

Approaching the Rare in the Clinical Setting: Diagnosis and Management of T-LGL-L in an Anemic Patient

T-cell large granular lymphocytic leukemia (T-LGL-L) is a rare neoplasm, accounting for 2-5% of Chronic Lymphocytic Leukemia cases in North America. Patients may have anemia, RBC aplasia, lymphocytosis, neutropenia and autoimmune disorders. Diagnosis is confirmed with proportionally increased clonal LGLs with phenotypes CD3+, CD8+, CD4-, CD57+ and rearrangement of the T-cell gamma receptor gene. Studies support immunosuppressive treatment, but no established guideline exists.

In turn, there is need for further research. We present a 53 year old male with Addison's disease and lactose intolerance admitted for severe symptomatic anemia of Hemoglobin 4 g/dL. He complained of progressively worsening shortness of breath and fatigue. Bone Marrow analysis detected erythroid hypoplasia, increased iron stores and increased lymphocytes with cytoplasmic granules. Flow cytometry identified clonal T-cells CD3+, CD4-, CD5+, CD7-, CD8+, CD56- and CD57+, suggestive of T-LGL-L. Antinuclear Antibody was also positive with a titer of 1:160. The patient eventually stabilized with Hemoglobin at 8 after RBC transfusion of 4 units. He was discharged with a course of Cyclophosphamide 100 mg and continued to improve clinically on follow-up.

This case highlights the clinical signs and symptoms of T-LGL-L patients. Genetic analysis showing T-cell receptor re-arrangement would support the diagnosis. Additionally, investigating autoimmune disorders in this patient could further delineate the pathogenesis of T-LGL-L. Monitoring his prognosis will also contribute to research into treating this disease.

We hope to add to current literature and help define a clinical framework to approach T-LGL-L patients. Our findings will support effective ways to properly manage these individuals.

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Category: Clinical Vignette

School: Ross University Medical School

Clerkship Director: Monica Nicola, MD

Presenter: Ryan Bean

Additional Authors: Dr. Asadulla Mohammed – Pulmonology, Critical Care, & Sleep Medicine;
Beaumont Health System

Chilaiditi's Syndrome Taking His Breath Away

Introduction: Interposition of the bowels in the hepatodiaphragmatic space is a radiological diagnosis known as Chilaiditi's sign. Paired with clinical symptoms, it becomes Chilaiditi's Syndrome. Infrequently are respiratory symptoms present, let alone the chief complaint.

Case Presentation: A 66 year old male with significant PMH of Asthma/COPD Overlap Syndrome, GERD and HTN presented to his pulmonologist with chronic dyspnea on exertion s/p a fall down stairs 2 months prior. The patient complained of exertional dyspnea, cough, wheezing, and orthopnea. Denied leg swelling. Vital signs were stable. Respiratory exam revealed diminished air entry bilaterally. Abdominal exam was unremarkable. CXR demonstrated elevation of the right hemidiaphragm. PFT resulted in mild obstruction and restriction with severe decrease in diffusion capacity. Chest CT revealed right hemidiaphragm with overlying right lower and middle lobe atelectasis, slight right mediastinal shift, a nodule, and Chilaiditi's sign. Sniff test ruled out diaphragmatic paralysis. PET scan ruled out malignancy of the nodule. MRI ruled out C-spine fracture and phrenic nerve damage. His echo was normal with an EF of 65%. The patient was diagnosed with Asthma/COPD Overlap Syndrome and Chilaiditi's Syndrome. He continues to have exertional dyspnea to this day. Surgical intervention of the herniated bowels has been discussed, but the patient remains hesitant.

Discussion: This case illustrates an extremely rare cause of dyspnea. Chilaiditi's Syndrome usually involves transient or permanent abdominal pain, nausea, vomiting, and other GI symptoms. While respiratory symptoms have been described in the literature, it is far less common and seldom the only complaint.

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Category: Clinical Vignette

School: Ross University Medical School

Clerkship Director: Monica Nicola, MD

Presenter: Akash Jaggi

Additional Authors: Justin Field, MD, Asma Nayyar, MD, Anupam Sule, MD, PhD

The Scimitar that Failed to Slice the Septum

INTRODUCTION:

Scimitar syndrome is a rare (1 in 100,000 births) congenital vascular malformation with partially anomalous pulmonary venous connections (PAPVC) usually accompanied by atrial septal defects. Typically the right lobe of the lung drains into the inferior vena cava. Depending on the shunt volume patients may present in infancy or as adults.

CASE:

A 70-year old woman with a past medical history of Stage III CKD and hypertension presented with worsening shortness of breath. An echocardiogram suggested severe pulmonary hypertension, confirmed by right heart catheterization. A CT without contrast revealed the anomalous vein from the right upper lobe suggestive of Scimitar syndrome. The patient did not have any other associated congenital heart defects (CHD) with left to right shunting occurring only in the lung, which may have mitigated the severity of the condition leading to a very late presentation. The patient is being evaluated to determine if corrective surgery or heart and lung transplant would be the best management option.

DISCUSSION:

This case represents a unique presentation of a rare disease. Isolated PAPVC may present later and with less severity than the typical Scimitar syndrome. However it can result in severe pulmonary hypertension with a limited life expectancy without surgery.

CONCLUSION:

Scimitar syndrome or PAPVC should be considered in the differential for pulmonary hypertension to prevent misdiagnosis as idiopathic pulmonary hypertension as the treatment strategy differs significantly.

Poster: 39

Category: Clinical Vignette

School: Ross University Medical School

Clerkship Director: Monica Nicola, MD

Presenter: Abdllqwy Obeid

Additional Authors: Justin Field MD, Anupam A Sule MD, PhD, FACP

Shingle, Shingle, Can't Go Tinkle

INTRODUCTION:

Acute urinary retention is a medical problem commonly caused by obstruction, infection, medications, constipation or neurologic problems. If not treated it can lead to AKI and ultimately ESRD.

CASE:

86-year-old gentleman with a PMH of BPH presented to the ED for inability to void for three days. He denied hematuria, dysuria or discharge. At baseline, while on finasteride and tamsulosin, he had a weak stream, urgency, nocturia and dribbling, unchanged for several years. Abdominal exam revealed suprapubic tenderness, right tender gluteal erythematous maculopapular rash, hyperpigmentation, and ruptured vesicles along the S2-S3 dermatome, not crossing midline. A Foley catheter was placed and drained over one liter of urine. Urinalysis was unremarkable; BUN was 97 and creatinine 3.21; PCR swab was positive for varicella zoster. Valacyclovir was started and patient was discharged with a Foley catheter for outpatient follow up. Three weeks later his symptoms returned to baseline.

DISCUSSION:

Herpes zoster is caused by reactivation of latent varicella-zoster virus dormant in dorsal root ganglia. Involvement of S2-S4 dermatomes causes motor and sensory neuropathy resulting in bladder atonia and loss of sensation leading to obstructive uropathy and ultimately renal failure. Prompt catheterization followed by six weeks of clean intermittent catheterization is the recommended treatment.

CONCLUSION:

It is important to be aware of this rare complication of sacral herpes zoster as it can go unnoticed in elderly patients with incontinence. Knowledge of this self-limiting condition can prevent unnecessary testing and invasive instrumentation as well as progression to AKI and even renal failure.

Poster: 40

Category: EBM

School: Ross University Medical School

Clerkship Director: Monica Nicola, MD

Presenter: Olusola Ogundipe

Additional Authors: Anup Kumar Trikanand Ashwini Kumar, MD.MS, Anupam Sule, MD, PhD, FACP.

Whipped and Weak!- Literature Review of Nitrous Oxide Abuse

Introduction:

Recreational nitrous oxide use is estimated at 9.3% among adolescents. It is an aerosol in whipped cream cans procured as canisters called "whippets". Clinical features of N₂O abuse mimic acute spinal cord injury.

Methods:

We reviewed literature on Pubmed. Search terms were "Nitrous oxide", "whippet", "whippit", "addiction" and "over use". Anesthetic, occupational or accidental exposure were excluded.

Results:

There was male preponderance (70%), 55% were 17 to 25 age range. 14% were polysubstance abusers. 59% reported upper and 81% lower limb paresthesia. 16% had upper and lower limb weakness, 17% reported only lower limb weakness. 57% reported ataxia. Others reported psychosis (10%), bladder dysfunction (9%), memory loss (7%), sexual dysfunction (7%), skin pigmentation (2%) and bowel dysfunction (2%). Imaging showed cervical spinal cord lesions on T2 weighted MRI in 27% of the cases, 3% with thoracic spinal cord lesions and 2% with both thoracic and cervical spinal cord lesions. 10% however had normal imaging. Management was with high dose intramuscular B12 acutely followed with oral replacement.

Discussion:

N₂O abuse is underreported. Data suggests highest incidence in young adult males. Damage to the spinal cord is thought to be due to inactivation methionine synthase that presents as paresthesia, weakness and ataxia with low normal to normal Vitamin B12 levels.

Conclusion:

N₂O abuse presents as paresthesia, weakness and ataxia involving upper and lower limbs that may worsen with frequency, volume and duration of use. Suspected cases should be managed with vitamin B12 supplementation and cessation counseling.

Poster: 41

Category: Clinical Vignette

School: Ross University Medical School

Clerkship Director: Anupam A. Sule

Presenter: Peter Paik

Additional Authors: Kedareeshwar Arukala, M.D.; Maulik Govani, M.D.; Anupam Sule, M.D., Ph.D

Right Site, Wrong Route

Central venous catheters are routinely placed in more than 5 million patients each year. The preferred site of insertion is one with fewer risks and easier access.

A 58-year-old gentleman was admitted for septic shock, cerebrovascular accident, and non ST segment elevation myocardial infarction. A central venous line was needed for antibiotic and vasopressor administration. Due to trauma from a fall to the right side and previously failed catheterization attempts at the left subclavian and femoral veins, the left internal jugular vein was accessed. On chest radiography for confirmation, the left internal jugular central venous catheter was seen projecting down the left paraspinal region. It did not take the expected course across the midline towards the right and into the SVC. Given this imaging, we reviewed a CT chest with contrast done on a prior admission which revealed a duplicated SVC on the left side that had not been reported on the original CT scan interpretation.

A left sided SVC is present in approximately 0.3 to 0.5% of the population with 90% of these draining into the coronary sinus. A widened mediastinum can be an indication of a duplicated SVC. During placements of central venous lines and pacemakers, irritation of the coronary sinus may result in hypotension, arrhythmia, myocardial ischemia, or cardiac arrest. Hence, when attempting a left internal jugular vein central venous catheter placement it is important to be aware of venous anomalies in order to prevent these complications.

Poster: 42

Category: Clinical Vignette

School: Ross University Medical School

Clerkship Director: Monica Nicola, MD

Presenter: Sandeep Sohal

Additional Authors: Anupam Sule, MD, PhD

Tickled to the Bones by My Lymph Nodes!

INTRODUCTION

Back pain is a common presentation in primary care. Usually no significant pathology is identified and the pain is attributed to "lumbosacral strain." On rare occasions it can herald a serious underlying pathology as illustrated in this case.

CASE

A 36-year-old gentleman recurrently presented for ongoing back pain without neurological deficits. Initial lumbar x-ray showed nonsignificant degenerative changes in L5-S1. He was treated conservatively for lumbosacral strain. On a return visit 6 months later he described the back pain worsening and waking him up at night. He also noted 30lbs weight loss. MRI revealed diffuse bone marrow infiltration of lumbar spine. He was also anemic. Due to suspicion of multiple myeloma (MM) evaluation for monoclonal immunoglobulins was performed, which was negative. Bone marrow aspiration showed infiltrates of plasma cells, eosinophils and fibrous tissue. A CT scan revealed retroperitoneal and mediastinal lymphadenopathy. CT guided biopsy of mediastinal lymph nodes revealed sclerotic fibrous tissue and CD30+ atypical mononuclear cells. He was diagnosed with stage IVB Nodular Sclerosing Hodgkin (NSHL) Lymphoma. Chemotherapy was initiated.

DISCUSSION

Presenting symptoms of Hodgkin Lymphoma commonly include lymphadenopathy, fatigue, fever, night sweats and weight loss. Multiple Myeloma usually presents as diffuse marrow infiltration or lytic lesions, with bone pain. In this case, NSHL mimicked Multiple Myeloma in presenting with back pain.

CONCLUSION

This case illustrates NSHL presenting as low back pain. NSHL may be considered in the differential diagnoses in a patient with back pain whose workup for Multiple Myeloma is negative.

Poster: 43

Category: Research

School: Ross University Medical School

Clerkship Director: Monica Nicola, MD

Presenter: Megan Wolak

Additional Authors: Eliza Slama MD, Jean-Lucien Omekanda MD, Kedareeshwar Arukala MD, Fabian Fregoli MD

Evaluation of Rapid Response Team Outcome in a Community Teaching Hospital

Introduction

The development of the Rapid Response Team (RRT) has led to decreased morbidity and mortality. While some publications have identified pre-RRT characteristics and patient demographics that improve outcomes, our study focused on intra-RRT characteristics that could lead to improved outcomes.

Methods

We conducted a retrospective chart review from July 2012 to December 2014 on 2,216 RRT cases. We assessed them based on date, time, and reason for the RRT activation, response time, duration, intervention, patient transfer location, patient demographics, primary admission diagnosis, death during RRT, progression to cardiopulmonary arrest, length of stay, and Charlson Comorbidity index.

Results

Significantly, we found the most common reason for RRT activation in our poor outcome group was pulse oximetry <90% (32.1%), followed by altered mental status (14.9%). In this subgroup of poor outcome, 11.8% were admitted for pneumonia. Comparing poor outcome vs those without poor outcome, the poor outcome group had a higher Charlson Comorbidity index (5.55 + 2.8 versus 5.28 + 2.8 respectively), shorter RRT response time (2.73 + 2.44 min versus 3.19 + 4.80 min respectively), longer RRT duration (121.6 + 79.3 min versus 82.45 + 60.1 min respectively), and longer length of stay (14.3 + 12.1 days versus 11.45 + 9.15 days respectively).

Discussion

Although there has been a decrease in morbidity and mortality since the implementation of the RRT, there is limited data regarding factors that affect outcomes. Future studies should identify variables resulting in poor outcomes for early identification to further decrease morbidity and mortality.

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Category: Clinical Vignette

School: Ross University Medical School

Clerkship Director: Monica Nicola, MD

Presenter: Megan Wolak

Additional Authors: Rovin Saxena MD, Cecilia Cosma MD

Think Outside the Liver: Nephrogenic Ascites

INTRODUCTION

Approximately 15% of the cases of ascites are due to a pathological process other than portal hypertension. Dialysis associated ascites contributes to 1% of this minority. We describe a patient who presented with unexplained ascites that was eventually diagnosed as nephrogenic in origin.

CASE DESCRIPTION

51 year old male with ESRD presented with abdominal distention, pain, and nausea. Patient is a former alcoholic that stopped drinking 3 years ago. Physical exam revealed a distended tender abdomen, dull to percussion in bilateral flanks with a positive fluid wave. Patient had no stigmata of cirrhosis. Abdominal ultrasound described hepatomegaly with homogeneous echotexture of the liver, and a large ascites. There was no evidence of portal or splenic vein thrombosis.

Diagnostic/therapeutic paracentesis removed 2.3L of clear fluid. Fluid analysis yielded a SAAG of 0.3 g/dL, therefore, classified as non-portal hypertension related ascites. Neutrophil count was 134 cells/mm³, culture was negative for microbes/AFB and cytology was negative for malignant cells. Labs revealed normal liver enzymes, liver functional tests and hepatitis panel. After a thorough workup, a clear underlying etiology of this patient's ascites was not identified. This led to the diagnosis of nephrogenic ascites after eliminating all possible etiologies of exudative ascites.

DISCUSSION

Nephrogenic ascites is a syndrome of recalcitrant ascites associated with ESRD. Pathophysiology of this condition is not clearly understood and the diagnosis is one of exclusion. ESRF should be included in the differential diagnoses of low SAAG ascites (< 1.1).

Poster: 45

Category: Clinical Vignette

School: St. George's University School of Medicine

Clerkship Director: Raymond Hilu, MD, FACP

Presenter: George Mammo

Additional Authors: Rose Natheer, MD; Ashish Bhargava, MD

A Rare Presentation of Rhabdomyolysis in a Diabetic Female

Introduction: Acute onset lower extremity pain and swelling in diabetic patients raises suspicion for infectious and vascular processes including cellulitis, deep vein thrombosis, and necrotizing fasciitis. Rarely seen and diagnosed, however, is muscle inflammation and infarction, especially in those with microvascular complications and uncontrolled blood glucose levels. We report a case of Diabetic Myonecrosis presenting with necrotic lower extremity ulcerations in the presence of severely elevated creatine kinase (CK).

Case: A 57 year-old female with type II diabetes presented with pain in both lower extremities after a mechanical fall at home, with a four-hour down time. Physical examination revealed multiple bullae, fluid-filled vesicles, and necrotic right lower extremity ulcerations. She was afebrile and CK was 20,000. Treatment for rhabdomyolysis was initiated. Subsequently, lesions progressed to foul-smelling ulcerations across the lower extremity, and treatment for cellulitis was started with IV antibiotics. After no improvement in pain and CK levels still above 3,000, MRI confirmed myonecrosis in the muscles of the lateral compartment of the leg. Her course improved after supportive care with rest and analgesia.

Discussion: This case demonstrates that Diabetic Myonecrosis can be easily misdiagnosed and overlooked, especially while treating concomitant ulcerations. Early suspicion is required and treatment involves rest, analgesics, and aggressive blood glucose control. Abrupt muscle pain and swelling with elevated CK levels correlate strongly with the diagnosis. MRI is confirmatory with high specificity in identifying edema and inflammation. Gold-standard muscle biopsy is performed only in patients failing treatment or if MRI is inconclusive.

Poster: 46

Category: Clinical Vignette

School: St. George's University School of Medicine

Clerkship Director: Raymond Hilu, MD, FACP

Presenter: Jessica Misich

Additional Authors: Zohaib Ahmed MD, Luay Dawood MD, Elizabeth Bankstahl MD

A Challenging Case of Exudative Pleural Effusion

Pleural effusion is a problem physicians encounter that may commonly be associated with hypothyroidism, but is rare in hyperthyroidism and predominantly reported in patients with Grave's disease. This is the case of a patient presenting with new onset atrial fibrillation and unilateral pleural effusion.

Case: A 49-year-old male with recently diagnosed with thyrotoxicosis presented with tachycardia. The electrocardiogram showed atrial fibrillation with rapid ventricular response, rate of 122-beats/minute and QRS duration of 72 msec. Labs showed TSH <0.01 mcunit/ml, T4 = 6.2 ng/dL, and T3 = 19 pg/mL. A radioactive iodine uptake study indicated hyperthyroidism with a left thyroid toxic nodule. The hospital stay was complicated after echocardiogram showed right ventricular strain with right pleural effusion. A CT angiogram confirmed the pleural effusion and showed right hilar lymphadenopathy. A thoracentesis yielded 2.4 liters of exudative fluid with reactive mesothelial cells. Further studies showed an elevated ACE of 91 unit/L. The patient was advised to follow-up for further workup.

Discussion: Though many cases of pericardial and pleural effusion in the setting of hypothyroidism have been reported, only a few cases have been reported in hyperthyroidism. Our hypothesis of the cause of pleural effusion in hyperthyroidism is through the indirect effect of thyroid hormone. This effect causes hyperthermia due to increased metabolism in internal organs leading to cutaneous vasodilation. The heart responds by increasing cardiac output to maintain sufficient blood flow, causing increased hydrostatic pressure and accumulation of fluid in the pleural cavity.

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Category: Clinical Vignette

School: St. George's University School of Medicine

Clerkship Director: Raymond Hilu, MD, FACP

Presenter: Abdulla Nasser

Additional Authors: Jason Aboudi Mouabbi M.D., Tarek Hadid M.D.

A Rare Case of Leukemia: Plasma Cell Leukemia

Plasma cell leukemia (PCL) is a rare and aggressive form of multiple myeloma characterized by high levels of plasma cells in circulating blood. Two forms of PCL exist: one originates de novo (primary PCL) and a secondary leukemic transformation of multiple myeloma (secondary PCL). Here we present a case of secondary PCL.

Case report

A 72 year old woman with a known history of multiple myeloma was admitted after experiencing nausea, vomiting, severe abdominal pain and confusion. Patient has been on lenalidomide–dexamethasone induction therapy followed by lenalidomide maintenance therapy since 2011. Initial labs demonstrated a calcium level of 12 mg/dL, anemia with hemoglobin 7.2 mg/dL, an elevated leukocyte count of 17,000/ cu mm. and acute kidney injury. A review of her peripheral blood revealed the presence of numerous plasma cells in the blood. She was diagnosed with plasma cell leukemia and was started on a novel immune agent called Bortezomib. At five month follow up she responded to treatment with complete remission.

Discussion

PCL is one of the most aggressive human neoplasms. It is seen in 2% of multiple myeloma patients as the terminal phase of the disease. Secondary PCL patients have a median survival of less than 2 months. The poor prognosis is due to the fact that secondary PCL is usually refractory to treatment because it is treated with the same agents used for MM. New immune agents such as Bortezomib are showing great promise in controlling PCL and prolonging the disease free survival of PCL patients.

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Category: Clinical Vignette

School: Trinity School of Medicine

Clerkship Director: Paula Wilson, MD MPH

Presenter: Janel Bakou

Additional Authors: Brielle Marks MSIII, Ahmed Ibrahim, MD, FACP

End-Stage Renal Disease and Early-Onset Calciphylaxis: A Case Report

We discuss the presentation of Mr. B, a 51-year-old African American male, diagnosed with end-stage renal disease (ESRD) initiated on hemodialysis 6 months prior to presentation. After starting dialysis, the patient developed a bulla measuring approximately 8cm x 10cm x 2cm, which rapidly progressed into necrotic ulcerations of the lower extremities. Work-up of the ulcerations were consistent with severe calciphylaxis. He developed these lesions just 6 months into his end-stage renal disease diagnosis. Unique to this case is the rapidity of onset, severity and extent of lesions and positive response to sodium thiosulfate. Calciphylaxis as an entity is not well understood, and there is limited evidence behind current treatments.

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Category: Research

School: Universidad Nacional Mayor De San Marcos

Clerkship Director: SERGIO RONCEROS MEDRANO

Presenter: Carlos Bedia

Additional Authors:

Protective Effect of *Mirabilis Expansa* on Osteoporosis Induced by Dexamethasone in Rats Ovariectomized

Mirabilis expansa, known as Chago, is an Andean plant Nictaginácea family, which is distributed from Venezuela to Chile. Chago a phytochemical analysis, performed in Lima - Peru, showed that this contains 283 mg of calcium and 111 mg phosphorus per 100 g of edible portion. Based on this, the purpose of this study was to evaluate the protective effect of the ethanol extract of Mauka on osteoporosis. Twenty-four female Holtzman rats were divided into 4 groups: A group without induction of osteoporosis (target group); and 3 other ovariectomized groups receiving intramuscular injection of dexamethasone (7.5 mg / kg every 5 days with a total of 9 doses), within these, one group receiving protective treatment (control group) and the other 2 groups remaining (group 1 and extract extract group 2) were administered concomitantly in different extract daily doses of 0.24 g / kg to 0.48g / kg respectively for 6 weeks. The findings resulting from analysis of bone mineral density (BMD) and histomorphometric parameters indicate that the highest dose Mauka ethanolic extract is effective in the protection from bone loss caused by estrogen deficiency and the application of corticosteroids .

Keywords: *Mirabilis expansa*, Calcium, Oophorectomy, Dexamethasone, Osteoporosis, bone mineral density, histomorphometric parameters.

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Category: Research

School: University of Michigan Medical School

Clerkship Director: Cyril Grum, MD, FACP

Presenter: Jacob Cedarbaum

Additional Authors: Dr. Michele Heisler, Brianne Brown, Rebecca Mase, Shayla Wilson

Participants' Perceptions of Autonomy Supportiveness in Diabetes Peer Health Coaching Relationships

Prior studies have shown that peer health coaching improves outcomes among adults with chronic conditions like diabetes. These studies have also suggested that higher ratings of their peer coach's autonomy supportiveness, the degree to which a coach supports participant choice, is associated with improved outcomes. This investigation aims to characterize the ways in which participants perceive autonomy support and how important these perceptions are to their satisfaction with their peer health coaches.

The VA Technology Enhanced Coaching (VA-TEC) program is an ongoing trial with diabetes patients with poor glycemic control at the Detroit VA hospital. Participants work for six months with peer coaches who are VA patients with good glycemic control. Responses to Health Care Climate Questionnaire (HCCQ) items were used to identify veterans who rated coaches either especially high or low in terms of autonomy supportiveness. Researchers then conducted semi-structured interviews with seventeen of these veterans.

Veterans who rated their coaches higher on HCCQ items tended to emphasize the positivity and non-judgmental nature of their coaches. They described coaches who offered them choices and non-directive suggestions in identifying health behavior goals. Veterans who gave their coaches lower HCCQ ratings described coaches who tended to be less personally engaged and less focused on addressing veterans' specific concerns about diabetes. Some veterans who gave lower ratings felt their coaches underestimated their existing knowledge of diabetes and were overly directive. These positive and negative traits can be used to train future coaches and other lay health workers.

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Category: Clinical Vignette

School: University of Michigan Medical School

Clerkship Director: Cyril Grum, MD, FACP

Presenter: Sara McLaughlin

Additional Authors: Adrienne Carey, MD and Jennifer Meddings, MD

A Dark Horse Diagnosis

Serratia marcescens is a gram-negative rod found in the environment. *Serratia* commonly causes urinary tract infections and pneumonia. Immunocompromised individuals and intravenous drug users are most susceptible to infection, as well as hospitalized patients who may be exposed to *Serratia* via invasive procedures or contaminated devices. Reports of *Serratia* infection of immunocompetent, non-hospitalized adults are rare. We present the case of a 73-year-old man with no obvious risk factors for *Serratia* infection. He presented to the emergency department with fevers, low back pain, and intermittent confusion. He was found to have *Serratia* bacteremia with osteomyelitis/discitis and bilateral psoas abscesses. We discuss the initial, non-specific presentation and clinical decision-making that led to his diagnosis. We review his hospital course, which included ruling out sequelae of *Serratia* infection and hyponatremia likely due to SIADH from pain. We discuss how, upon taking a more detailed history, we learned that the patient had a long-standing history of work with horses, and identify this as the most likely source of infection. Overall, this case demonstrates how the clinical presentation of osteomyelitis/discitis can be subtle and may lack typical signs and symptoms of infection. It also provides guidance on the complications of *Serratia* bacteremia and the work-up clinicians should undertake to look for such sequelae. This case also exemplifies how a careful history and physical examination can guide clinicians to a rare diagnosis, and how the multiple medical issues that arise during one's hospitalization can be addressed and managed for a positive outcome.

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Category: Research

School: University of Michigan Medical School

Clerkship Director: Cyril Grum, MD, FACP

Presenter: Lauren Merz

Additional Authors:

Molecular Determinants and Clinical Characteristics of HIV/AIDS-Associated Conjunctival Squamous Cell Carcinoma in Ghana

Conjunctival squamous cell carcinoma (CSCC) increases 49% for every 10 decrease in latitude, partially explaining the higher incidence of CSCC in Sub-Saharan Africa. However, there is a trend of increasing incidence of CSCC in Africa since the advent of the AIDS epidemic, and there is an observed 12x greater risk of developing CSCC when individuals are infected with HIV. In this study, a registry review of patients with CSCC at Komfo Anokye Teaching Hospital in Kumasi, Ghana was performed. Tumor blocks of the CSCC were retrieved, and brought to the University of Michigan for analysis of various biomarkers as well as the presence of various types of HPV.

The median age of onset of CSCC is 46.5 y/o with a range of 20-90 y/o, 51.5% (n=33) are female, and there is an equally low rate of smoking and alcohol use in our CSCC cohort as in the general Ghanaian population which is quite different than the usual demographic in Western CSCC. 39% of Ghanaian men with CSCC are HIV- while only 12% of women are HIV-. 75.4% (n=43) of patients with pathology reports presented with stage 3 or 4 CSCC, and of these patients 62.8% (n=27) are HIV+. Tumor molecular analyses is ongoing, and detailed results will be presented. This study is the first part of a 5-year study that aims to characterize head and neck cancers in HIV+ and HIV- African patients in order to better coordinate care and evaluate the burden of disease.

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Category: Clinical Vignette

School: Wayne State University School of Medicine

Clerkship Director: Diane Levine, MD, FACP

Presenter: Abraham Abdul-Hak

Additional Authors: James Meza MD , Scott Yaekle MD

Adult Xanthogranuloma: Novel Treatment Using Cryotherapy

Adult Xanthogranuloma: Novel Treatment Using Cryotherapy

Abstract:

Adult xanthogranuloma is a form of non-Langerhans cell histiocytosis of unclear etiology. It is a relatively rare entity usually appearing as a solitary tan-yellow papule or nodule. Systemic manifestations are often absent and the prognosis is good with many lesions resolving on their own. However, due to the cosmetic burden of the lesion patients are eager for treatment. Thus, investigation of management options is warranted.

We present the case of a 45 year old African-American female who presented to our clinic with a 5 month history of a slowly enlarging tanned papule on her left forehead. A shave biopsy was performed, followed by cryotherapy. Histological examination showed a normal epidermis with an underlying dermis containing proliferative spindle and ovoid cells with classically associated Touton giant cells.

Upon follow up, the patient was very pleased with the result of cryotherapy as the lesion had resolved, becoming flatter and less pigmented. This case demonstrates the effectiveness of cryotherapy in the management of adult xanthogranulomas.

Poster: 54

Category: Clinical Vignette

School: Wayne State University School of Medicine

Clerkship Director: Diane Levine, MD, FACP

Presenter: Angie Adhami

Additional Authors:

Basidiobolomycosis in Burn Patient in Temperate Climate

Basidiobolus ranarum is a filamentous fungus that is ubiquitous in nature and is found in decaying plant material. Historically, infections due to *Basidiobolus* were limited to tropical and subtropical areas, and generally caused subcutaneous infection in immunocompetent children. Recently, the geographic distribution of *Basidiobolomycosis* has expanded and involves the desert areas of the United States. The range of tissues infected has also expanded to include the gastrointestinal tract, lymph nodes, and muscles. In 2012, *Basidiobolus* sp. was classified as emerging invasive fungus in desert regions of the United States, causing gastrointestinal basidiobolomycosis. However, *Basidiobolomycosis* has not been reported in temperate climates during winter season. Here we present the unique case of *Basidiobolomycosis* causing infection of eschars in an adult burn patient from Michigan during winter. This patient was a previously healthy 22 year old American male, who sustained 80% total body surface area (TBSA) burns after a motor vehicle accident. Patient had a persistent fever, elevated heart rate, leucocytosis and eosinophilia, therefore because of these clinical signs of infection, eschar was sent from right flank for culture, which grew *Basidiobolus ranarum*. Patient clinically improved with Amphotericin and micafungin. An extensive search of the literature on *B. ranarum* revealed no previous reports of this fungus causing infection in burn victims, and no case reports of *B. ranarum* causing soft tissue infection in temperate climates. This case represents a never before described presentation of *B. ranarum* infection that should be considered in individuals with severe burns.

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Category: Clinical Vignette

School: Wayne State University School of Medicine

Clerkship Director: Diane Levine, MD, FACP

Presenter: Ahmad Arabi

Additional Authors: Angelos Katramados, MD Neurology, Henry Ford Health System

MELAS, A Late Presentation?

Mitochondrial encephalopathy with lactic acidosis and stroke-like episodes (MELAS) is a rare, maternally inherited disorder with clinically heterogeneous manifestations.

A 52-year-old female is admitted to the inpatient stroke unit for a 3-day history of sudden onset confusion & speech difficulties. Past Medical History is positive for bilateral sensorineural hearing loss & vision loss since her early twenties. Family history is questionable for MELAS in sister, and stroke in mother (at age 47). Exam was positive for receptive aphasia with impaired repetition. Computed tomography showed hypoattenuation in the left lateral temporal lobe with finger-like projections. Magnetic resonance imaging showed a lesion in the same region with a few questionable tiny areas of cortical enhancement, expansion and sulcal effacement. MR spectroscopy showed elevated lactate levels within the left temporal lobe lesion, as well as within otherwise normal appearing areas of the brain and cerebrospinal fluid (CSF). Laboratory testing revealed elevated serum and CSF lactate. Funduscopy was positive for significant bilateral chorioretinal atrophy with hyperpigmentation. Muscle biopsy showed ragged-red fibers. Patient was treated with L-arginine, L-carnitine, co-enzyme Q10, thiamine, & riboflavin and returned home with outpatient speech therapy.

This case illustrates the importance of knowing the common presenting clinical features of MELAS. Although this patient's age exceeds the requirement of <40 in the original diagnostic criteria for MELAS, she has had over 20 years of hearing/vision changes, symptoms relatively common, but never attributed, to her condition. This case also demonstrates the importance of family history in rare diagnoses.

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Category: Clinical Vignette

School: Wayne State University School of Medicine

Clerkship Director: Diane Levine, MD, FACP

Presenter: Megan Baker

Additional Authors: Lakshmi Swaminathan, MD, MHSA

A Rare Presentation of Persistent Hypokalemia in a Patient with Renal Failure

A 21-year-old male with a history of hypertension and autosomal dominant polycystic kidney disease (ADPKD) presented with persistent nausea, vomiting, abdominal pain, and weight loss. Labs showed anion gap acidosis, worsening GFR of 3 mL/min/1.73 m², and potassium of 3.0 mmol/L. Despite potassium supplementation and dialysis, his hypokalemia persisted. His urinary potassium-to-creatinine ratio was 17.8 meq/g, consistent with renal potassium wasting. Although a standard therapy in ADPKD, lisinopril only marginally lowered his blood pressure, and potassium remained low at 2.8 mmol/L. Continuation with lisinopril and follow-up with nephrology was recommended at discharge.

The presentation of hypokalemic hypertension in ADPKD is uncommon. In the absence of concurrent primary hyperaldosteronism, only three reported cases have been found in the literature. An up-regulated systemic renin-angiotensin-aldosterone system (RAAS) has long been implicated in the hypertension that accompanies ADPKD. However, in a subset of patients, secondary hyperaldosteronism caused by an overactive intrarenal RAAS has been proposed to contribute to hypertension and hypokalemia. High levels of ectopic renin production by cyst-lining cells are thought to activate the pathway in a paracrine and autocrine manner.

While direct renin inhibitors do not have a well-defined role in ADPKD, they may be uniquely positioned to impact hypertension and hypokalemia in patients with an up-regulated intrarenal system. In the few similar case studies published on hypokalemic hypertension in ADPKD, direct renin inhibition has been shown to be effective. This and other similar case studies support the value of further investigation of the role of direct renin inhibitors in ADPKD.

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Category: Clinical Vignette

School: Wayne State University School of Medicine

Clerkship Director: Diane Levine, MD, FACP

Presenter: Megan Baker

Additional Authors: Lakshmi Swaminathan, MD, MHSA

Unrelenting Otolgia – A Red Flag for Head and Neck Cancer

A 68-year-old man who was a former smoker presented with 3-months of left-sided otalgia and 1-week of dysphagia and odynophagia. Diagnostic workup revealed stage IV supraglottic laryngeal squamous cell carcinoma and one metastatic lung nodule. Two months after completing chemoradiation, the supraglottic mass had improved, but multiple metastatic pulmonary nodules were found. Second-line chemotherapy was initiated, however his otalgia expanded bilaterally, dysphagia worsened, and he began exhibiting personality changes. After experiencing left-sided hypoacusis and facial palsy, intracranial metastatic disease was discovered on MRI. He received palliative chemotherapy until he passed away, about 13 months after his diagnosis.

This case features referred otalgia as an early, sometimes only red flag for head and neck cancer due to the convergence of sensory pathways involving cranial nerves V, VII, IX, and X. While early stage cancers can be successfully treated with surgery or radiation therapy, later stage and metastatic disease have a poor prognosis, with palliation of symptoms often becoming the primary goal. Therefore, the ability to diagnose in the early stages of disease is critically important.

This case is also an example of uncommon intracranial metastatic spread from a primary head and neck cancer, estimated to occur in 0.4% of head and neck squamous cell carcinomas, and portending a poor prognosis and often other distant metastases. A high level of suspicion and urgent imaging are warranted in patients with head and neck cancers who develop new, sometimes subtle neurological symptoms, especially in the setting of advanced stage disease.

Poster: 58

Category: Clinical Vignette

School: Wayne State University School of Medicine

Clerkship Director: Diane Levine, MD, FACP

Presenter: Brian Chun

Additional Authors: Danielle Heidemann

Green Tea-Related Acute Liver Injury with Mixed Autoimmune and Drug-Induced Features

Case Description:

A 36-year old healthy male presented with subacute fatigue and jaundice. He admitted to using herbal green tea extract for 2 months. He reported a prior episode of acute hepatitis 10 years ago when he was also on the green tea supplement; viral and autoimmune workup that was negative at that time. Physical exam was notable for marked icterus and RUQ tenderness.

Upon workup, he had elevated transaminases and bilirubin, with normal albumin and INR. A complete viral panel was negative. DILI was initially suspected and the patient was treated supportively, however transaminases and bilirubin worsened. A complete autoimmune work up was pursued which revealed only positive ANA. Liver biopsy revealed interface hepatitis with no fibrosis.

Methylprednisolone was started with rapid improvement in LFTs. The patient's acute liver injury was attributed to either autoimmune hepatitis (AIH) or drug-induced liver injury (DILI) with a stronger suspicion of AIH.

Discussion:

A definitive diagnosis of AIH is made with positive autoantibodies, elevated IgG levels, typical histologic features on biopsy, and absence of viral hepatitis. This patient met all criteria except elevated IgG, which made his diagnosis likely but not definite.

In contrast, DILI is a diagnosis of exclusion that typically improves during withdrawal of the offending agent. A diagnosis of DILI can be assessed using the Roussel Uclof Causality Assessment Method (RUCAM) questionnaire, of which this patient scored in the probable category. This case underscores key differentiating features of AIH and DILI and highlights the importance of eliciting OTC supplement usage.

Poster: 59

Category: Clinical Vignette

School: Wayne State University School of Medicine

Clerkship Director: Diane Levine, MD, FACP

Presenter: Fernando Del Valle

Additional Authors:

Rare Case of Pancreatitis As a Consequence of Afferent Loop Syndrome

Introduction: Afferent Loop Syndrome is a complication of several gastric bypass surgeries. Acute pancreatitis is a rare, but reported consequence of the aforementioned syndrome.

Case Report: The clinical presentation, diagnostic approach, and management of a 65-year-old female with Roux-en-Y gastric bypass complicated by Afferent Loop Syndrome and pancreatitis are reviewed here. The diagnosis was achieved compiling her surgical history, symptoms, laboratory data, and previous endoscopic studies. Moreover, Abdominal Computed Tomography showed a dilated jejunum and intrahepatic ductal system, which supported our diagnosis. Resolution of her symptoms was achieved by nasogastric decompression and conventional treatment of pancreatitis.

Conclusion: In patients presenting with acute pancreatitis, and a concurrent history of gastric bypass surgery, the possibility of Afferent Loop Syndrome should be considered, especially if common causes of pancreatitis have been excluded. Patients with unexplainable abdominal pain with such surgical history should also be evaluated for such syndrome, as it carries a high mortality rate.

Poster: 60

Category: Research

School: Wayne State University School of Medicine

Clerkship Director: Diane Levine, MD, FACP

Presenter: Benjamin Eilender

Additional Authors: Mona D Doshi MD, Mariella Goggins MD

Lack of Association in Low Birth Weight and Risk for Kidney Disease and Hypertension in African American Kidney Donors

Low birth weight (LBW) (<2500 gm), often a result of premature birth, is associated with decreased nephron number. Reduced nephron number is associated with increased risk of hypertension and Chronic Kidney Disease (CKD). African American (AA) live kidney donors are at increased risk of developing hypertension and CKD compared to Caucasian donors. LBW in kidney donors and their post-donation kidney function has previously been looked at only in Caucasian patients.

We examined LBW in AA live kidney donors and a possible association with future risk of hypertension and CKD. We conducted a retrospective cohort study of 179 AA live kidney donors that underwent nephrectomy at Harper and Henry Ford Hospitals from 1993-2010. Patient recall birthweights were collected via in-person patient interviews and over the telephone and then were checked with actual birth weights provided by the Michigan Department of Health.

Birthweight data was available for 66% of donors. Of these donors, actual birthweights were obtained for 88%. 12.7% of donors were born with LBW, with 10% of the LBW patients born prematurely. The other 87.3% of patients did not fit LBW criteria. Differences between LBW and non-LBW pre-nephrectomy in age, weight, SBP/DBP, serum creatinine and eGFR were not statistically different. Differences in outcomes of post-nephrectomy donors with LBW vs. non-LBW were statistically insignificant in terms of % with hypertension, % with microalbuminuria, and % with low eGFR, 10+ years post donation.

We conclude there is no association between birth weight of AA live kidney donors and their post-kidney donation outcomes.

Poster: 61

Category: Clinical Vignette

School: Wayne State University School of Medicine

Clerkship Director: Diane Levine, MD, FACP

Presenter: Lara Fahmy

Additional Authors: Samantha Arsenault, Richard Bremer, Donald Johnson, Alisha Mehta, Molly Belisle, Vanessa Rorai, Jennifer Mendez

A Case Report on the Oldest Known Living Patient with Jansen's Metaphyseal Chondrodysplasia

Chief Complaint: 38-year-old female, Indian origin, presents with aching pain in multiple joints

Patient History: At birth, patient diagnosed and treated for Polio and Rickets. At age 5, curvatures appeared at ends of multiple long bones and patient underwent ilizarov reconstructive procedures. At age 8, patient received new diagnosis of Ollier's Syndrome. Between ages 9-31, curvature and malformation of bones continued. Patient has two biological children, both with similar symptoms. At age 32, patient diagnosed with Jansen's Metaphyseal Chondrodysplasia (JMC).

Physical Exam: Patient evaluated for short stature. Height documented at 126 cm and head circumference 58 cm, indicating macrocephaly and severe microretrognathia. No enamel hypoplasia or dental caries noted. Shoulders narrowed with small clavicles. No difficulty in lateral rotation of neck. Mesomelia and acromelia noted along with hyperelastic fingers and severe deformity of forearms bilaterally. Toes were small with brachydactyly. Waddling gait noticed upon presentation. No scoliosis observed.

Lab Results: X-ray imaging displays malformations consistent with JMC including curvature deformities in both forearms and metacarpals, especially at the metaphyseal region of the long bones. Similar deformities observed in lower extremities. X-ray negative for scoliosis and major vertebral deformities. Rods and screws observed in x-rays from previous surgeries. Abdominal ultrasounds reveal calcium deposits in both kidneys, consistent with elevated blood calcium levels found in JMC.

Assessment/Plan: No cure for JMC. Regular check-ups, symptom management, and imaging to screen for dangerous skeletal malformations. Serum monitoring of calcium required. Hydrocodone-acetaminophen and diazepam prescribed for pain management.

Poster: 62

Category: Clinical Vignette

School: Wayne State University School of Medicine

Clerkship Director: Diane Levine, MD, FACP

Presenter: Alexandra Haluska

Additional Authors: Michael Kern, MD; William Dillon, DO

Familial MEN1 Syndrome Presenting As Vertigo Secondary to a Fourth Ventricle Ependymoma

A 34 year old previously healthy male presented with worsening continuous vertigo, associated with nausea and vomiting of two weeks duration. He had previously seen his primary care physician and visited another ED for these symptoms without relief. He presented to our ED 14 days from onset, after a night of severe nausea, which included several episodes of emesis which awakened him from sleep. He reported sleeping propped upright because changing from a supine to sitting position aggravated the vertigo and nausea, and multiple episodes of emesis first thing in the morning. He also reported hiccups, one episode of blurred vision, and a mild retro-orbital headache which began after the onset of vertigo.

Physical exam revealed bidirectional horizontal nystagmus and vertical nystagmus. In addition to the bidirectional nystagmus, a HINTS evaluation showed a normal horizontal head impulse test, also consistent with a central etiology, and an absence of skew deviation. He did not have any neurologic deficits and cerebellar function was intact. The initial workup included a CT without contrast, which revealed a possible tumor of the fourth ventricle with a small amount of hemorrhage, without hydrocephalus. An MRI was consistent with an ependymoma, which was later confirmed with pathology after a debulking surgery.

The patient's maternal aunt has MEN1 confirmed with genetic testing, and his mother has neoplasias consistent with MEN1. This patient has not yet undergone genetic testing. This case demonstrates the importance of physical exam to distinguish central and peripheral causes of vertigo.

Poster: 63

Category: Clinical Vignette

School: Wayne State University School of Medicine

Clerkship Director: Diane Levine, MD, FACP

Presenter: Vijay Jarodiya

Additional Authors:

Are MRIs safe? MRI Contrast-Induced Anaphylaxis

Magnetic resonance imaging gadolinium-based contrast is traditionally thought to be very safe for patients compared to iodine-based contrast, with adverse allergic reactions being very rare. We describe a 58-year-old female who arrived for an outpatient MRI with contrast and became acutely short of breath, hypoxic and developed bradycardia shortly after administration of gadobenate dimeglumine. A code blue was called and she received epinephrine, steroids and diphenhydramine and was intubated for airway protection. She was admitted to the medical intensive care unit for observation. The anaphylaxis was managed with intravenous steroids and diphenhydramine and the patient was extubated and discharged the next day from the intensive care unit. The incidence of immediate sensitivity reactions to gadolinium-based contrast is less than 0.1%, with anaphylactic reactions being less than 0.0001%. Although adverse reactions to gadolinium contrast are rare, it is important to consider the possibility of immediate hypersensitivity and anaphylactic reaction to contrast during magnetic resonance imaging, not just computerized tomography scans.

Poster: 64

Category: Clinical Vignette

School: Wayne State University School of Medicine

Clerkship Director: Diane Levine, MD, FACP

Presenter: Vijay Jarodiya

Additional Authors:

Is It Crohn's? Incidental Submucosal Intestinal Lipomatosis

Intestinal lipomatosis, also known as lipohyperplasia, is a rare disease characterized by diffuse infiltration of the fatty tissue primarily in the submucosal layer of the intestines. We report a case of a 28-year-old male admitted to the intensive care unit for management of alcohol-induced liver failure who became febrile and was found to have diffuse submucosal lipomatous change throughout the colon and in the terminal ileum. There was a concern of a manifestation of prior inflammation and possible inflammatory bowel disease based on the imaging. While the patient did have abdominal pain and signs of a lower gastrointestinal bleed, his hemoglobin was stable and no colonoscopy or further intervention was required. Intestinal submucosal lipomatosis may be confused with Crohn's disease because of the 'fat halo sign' seen in chronic Crohn's disease although intestinal lipomatosis presents with more benign clinical and laboratory findings. While a rare occurrence, intestinal lipomatosis may explain abdominal pain and gastrointestinal bleeds of unknown origin. When presented with imaging concerning for Crohn's disease it is important to confirm the diagnosis with a colonoscopy or other modality.

Poster: 65

Category: Clinical Vignette

School: Wayne State University School of Medicine

Clerkship Director: Diane Levine, MD, FACP

Presenter: Yazan Kherallah

Additional Authors: Shemesh Adi, Kerwin Marla, Jones Gregory, Dakroub Allie, Blomingdale Richard

High Output Heart Failure in Waldenstrom's Macroglobulinemia

Hyperviscosity Syndrome is a known complication of Waldenstrom's Macroglobulinemia (WM) and can present with a variety of symptoms including visual changes, altered mental status, and congestive heart failure (CHF). While CHF is acknowledged as a clinical symptom, reports regarding which type of CHF is associated, and the occurrence of high output heart failure specifically, are lacking. In addition, clinical symptoms of hyperviscosity syndrome rarely present unless serum viscosity is above 4.0 centipoise. Here, we present the case of an 87-year-old female with biopsy confirmed WM who presented with high output heart failure in the setting of serum viscosity below the 4.0 threshold.

An 87-year-old African American female with past medical history of aortic stenosis s/p aortic valve replacement and CKD presented with shortness of breath and clinical signs of heart failure. Ultrasound revealed a hyperdynamic state with ejection fraction of 80 % as well as a functioning aortic valve without evidence of amyloidosis. Further workup showed a high paraprotein gap and IgM monoclonal gammopathy. Serum viscosity was only mildly elevated at 2.7 Cp. With plasmapheresis, the patient's clinical condition improved and heart function returned to baseline.

One possible explanation for the high output heart failure may be that increased serum viscosity leads to an increase in plasma volume, thereby generating demand beyond cardiac reserve. Regardless, the type of heart failure is important to identify. Whereas CHF with preserved ejection fraction due to chronic amyloid deposition is irreversible, the high output heart failure described here can be treated with plasmapheresis.

Poster: 66

Category: Clinical Vignette

School: Wayne State University School of Medicine

Clerkship Director: Diane Levine, MD, FACP

Presenter: Yazan Kherallah

Additional Authors: Azar Marlene, Shokr Mohamed

Anticoagulation in Hepatocellular Carcinoma with Portal Vein Thrombosis

The management of portal vein thrombosis presents many challenges, especially in the context of chronic portal vein thrombosis in patients with liver cirrhosis. In such cases, the decision of whether to use anticoagulation necessitates a comparison of thrombosis and bleeding risk, which involves considering baseline coagulation abnormalities and the presence of varices.

We present the case of a 64 year old female with PMH of hepatitis C treated with Harvoni and liver cirrhosis who was found to have infiltrative liver carcinoma with left and right portal vein thrombosis. As the clot was deemed to have a high potential for extension, the decision was made to start heparin anticoagulation. Propanolol was also initiated for prophylaxis against variceal bleeding. The treatment was complicated with an acute intrabdominal bleed two weeks after initiation which required therapeutic paracentesis and fluid resuscitation. Enoxaparin was discontinued and the patient was switched to Apixiban for its lower risk of bleeding.

The goal of this clinical vignette is to discuss the approach to anticoagulation in patients with portal vein thrombosis with an emphasis on weighing the risks of thrombosis versus bleeding. Whereas, enoxaparin is generally the first line of treatment, there have been case reports of anticoagulant agents like Rivaroxoban and Apixiban being used with favorable outcomes. However, there are also reports indicating decreased efficacy of these agents in patients with underlying cirrhosis.

Poster: 67

Category: Clinical Vignette

School: Wayne State University School of Medicine

Clerkship Director: Diane Levine, MD, FACP

Presenter: Eric Kim

Additional Authors: Cecilia Kraus, Joshua Collins

Case Report of Streptococcus Pasteurianus Bacteremia and Septic Hip Arthroplasty

Streptococcus pasteurianus (formerly *Streptococcus bovis* biotype II.2) is a group D streptococcus (GDS), a group famously associated with bacteremia in cases of gastrointestinal malignancy. *Streptococcus pasteurianus* has been noted in septicemia, endocarditis, and neonatal meningitis, but joint seeding is rare in case report literature. In this case we present a patient who developed streptococcus pasteurianus bacteremia and septic hip arthroplasty. Our patient was an 82 year old Caucasian female with a past medical history significant for right total hip arthroplasty, atrial fibrillation, and hepatitis C cirrhosis with esophageal varices. She presented with four weeks of right hip pain and was found to have systemic inflammatory response syndrome (4 criteria met) requiring resuscitation. Cultures on day 0 blood and day 1 arthrocentesis fluid grew streptococcus pasteurianus, and a complete surgical revision of the arthroplasty was performed on day 2. She was given antibiotic coverage with penicillin G and rifampin, and she showed improvement for four days with negative blood cultures on days 5 and 10. Transthoracic echocardiogram on day 5 showed no signs of endocarditis. Thereafter, her mental status became acutely altered and she passed away of respiratory failure on day 10. While GBS infections can be associated with liver disease, septic arthritis in an arthroplasty is a less reported phenomenon, especially with streptococcus pasteurianus. This case serves to highlight joint arthroplasties as a possible site for seeding by this newly differentiated GDS subspecies.

Poster: 68

Category: Clinical Vignette

School: Wayne State University School of Medicine

Clerkship Director: Diane Levine, MD, FACP

Presenter: Henry Kwon

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Disseminated Varicella Zoster Virus Causing Progressive Outer Retinal Necrosis in Newly Diagnosed HIV Patient

Progressive Outer Retinal Necrosis (PORN) is a rare consequence of Varicella Zoster Virus (VZV) infection most often seen in immunocompromised hosts.

A 54-year-old African American man with history of high-risk sexual behavior and recent shingles episode was evaluated for sudden onset vision loss. His symptoms began as predominantly severe left sided headaches and associated photophobia. Three days after his headaches began he awoke to blurred vision in his left eye that progressively worsened throughout the week and spread to encompass the right. Ophthalmic exam showed no light perception, unremarkable anterior segments, and patchy white foci in the periphery of both retinas. He was admitted and evaluated for giant cell arteritis (GCA) vs VZV vs Cytomegalovirus retinitis. He was found to be HIV positive with a CD4 count of 9 and viral load of 39238. Temporal artery biopsy was negative. Vitreous sample was positive for VZV. He subsequently developed decreased perineal sensation, urinary retention and fecal incontinence. MRI and positive cerebrospinal fluid from lumbar puncture supported diagnosis of VZV radiculopathy involving lumbosacral nerves. Ultimately, he was diagnosed and treated for disseminated VZV and associated PORN. Intravitreal injections and IV antiviral therapy were initiated, as well as ART for HIV. Moderate return of light perception was accomplished initially; however repeated deterioration has since occurred.

This case demonstrates the significant morbidity of disseminated VZV infection in an immunocompromised host, and reinforces the necessity for appropriate HIV screening in high risk populations.

Poster: 69

Category: Clinical Vignette

School: Wayne State University School of Medicine

Clerkship Director: Diane Levine, MD, FACP

Presenter: Syed Mahmood

Additional Authors: Anthony Van Vreede, David Mehregan

Lichen Planus Pemphigoides

Lichen planus pemphigoides (LPP) is a condition in which tense bullae appear on the skin of individuals affected with lichen planus (LP). Only 17 cases have been reported in the pediatric population. It is important to distinguish it from other bullous conditions for optimal treatment.

A 13 year old African American male presented to the clinic with a 2 month history of a widespread papular rash consistent with LP. A biopsy showed dense band like lymphocytic infiltrate in the papillary dermis, saw-tooth pattern of rete ridges, degeneration of the basal cell layer, and a hyperkeratotic epidermis. Over time, he developed bullae on areas both affected and not affected by LP, with no oral involvement. The bullae were tense with negative Nikolsky and Asboe-Hansen and biopsy of peribullous skin showed sub-epidermal vesicles. DIF revealed linear C3 and IgG deposition along the basement membrane. ELISA demonstrated circulating IgG against BP180 at 175 units, whereas IgG against BP230 antigen was within normal limits. The patient was found to have G6PD deficiency, thus treatment with dapsone was not initiated.

This case highlights the diagnostic criteria of LPP, a condition in which LP leads to epitope spreading and a subsequent autoimmune bullous disorder. It can be diagnosed with clinical presentation, light microscopy, and serological tests. Associated diseases like hepatitis C and HIV must be ruled out to minimize morbidity. Further investigations focusing on unique antigens involved in the pathogenesis of LPP are needed to develop appropriate treatments.

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Category: Clinical Vignette

School: Wayne State University School of Medicine

Clerkship Director: Diane Levine, MD, FACP

Presenter: Syed Mahmood

Additional Authors: Douglas Michael Piernick II, Steven Daveluy

Localized Lymphangioma Circumscriptum Associated with Hidradenitis Suppurativa

Localized Lymphangioma Circumscriptum (LC) is a rare, acquired, and benign condition of deep dermal and subcutaneous lymphatic tissue that presents as frog-spawn like lesions on the skin. It can be caused by multiple underlying diseases and is often confused for infectious causes when it appears on the genitals.

A truck driver in his 50's presented to the clinic with extensive hidradenitis suppurativa (HS) lesions which started after puberty. He had involvement of the groin, perianal, and axillae areas, with boils, sinus tracts, and nodules. His scrotum had characteristic small, clear, fluid filled vesicles that resemble a gelatinous mass of frog eggs on the surface of the skin. A biopsy confirmed that the lesions on the scrotum were LC.

Localized LC does not have predilection for any specific area on the body, but the scrotum is a particularly rare occurrence. The vesicles of LC communicate with subcutaneous lymphatic cisterns via dilated dermal lymphatics. The cisterns are lined with smooth muscle, the contraction of which leads to dilation of superficial vesicles. In most cases of acquired LC, there will be an associated condition such as Crohn's disease, radiation exposure, or cancer which disrupts the architecture of the lymphatic system, eventually leading to the presentation of the vesicles. In our patient, HS is the only pre-existing pathology evident in the vicinity of the new LC lesions and it likely limited the ability of subcutaneous lymphatic cisterns from completely draining in to the general lymphatic system.

Poster: 71

Category: CQI

School: Wayne State University School of Medicine

Clerkship Director: Diane Levine, MD, FACP

Presenter: T Mishra

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Use of Smartphone App-Based Monitoring of Hand Hygiene Compliance Among Healthcare Workers at a Tertiary Care Center

Background

Various Hand hygiene (HH) monitoring tools are currently available but with limited applicability due to incorrect or unsatisfactory reporting options. This study is a single center experience on use of smartphone application to audit HH compliance and provide performance feedback to HCWs.

Methods

A prospective observational study was conducted at Detroit Medical Center from June 2016 to December 2016. We established a Hand Hygiene Committee which appointed trained medical residents as 'secret observers,' who used a smartphone application 'Speedy Audits' to survey and capture the five moments of hand hygiene among HCWs. Based on these, we determined HH compliance rates (CR) for different professions, hospital sites, and unit locations to provide feedback and improve the compliance.

Results

Of the total 1229 HCWs observed during the 7-month period, the overall HH opportunity CR was 31% (916 complied opportunities /2939 opportunities). Based on two major 'before' and 'after' patient contact indications, CR was 30.5% (1022 compliances /3343 indications). The other CRs were 44% before an aseptic procedure, 35% after body-fluid exposure and 20% after patient environment contact. Among different professionals, the CRs were lowest among physicians (46%), nurses (30%) and medical students (21%).

Conclusion

Hand-hygiene monitoring by secret observers with the use of a smartphone application is a feasible and efficient way for tracking HH compliance, through which profession based and unit based reports can be generated to improve compliance.

Poster: 72

Category: Research

School: Wayne State University School of Medicine

Clerkship Director: Diane Levine, MD, FACP

Presenter: Jacob Oblak

Additional Authors: Jacob Oblak, David Viau, Syed Ayaz, Phillip Levy

Effects of Early Versus Delayed Oral Antihypertensive Therapy in Hypertensive Acute Heart Failure

Treatment of hypertensive acute heart failure usually involves stabilization with intravenous therapy including diuretics and vasoactive medications. Beyond acute stabilization, guideline-directed medical therapy recommends multiple oral antihypertensive agents. We hypothesized that early administration of oral antihypertensive agents in patients with hypertensive AHF would be associated with a shorter hospital length of stay. This was a single center retrospective cohort study conducted at Detroit Receiving Hospital. Patients with a hospital discharge diagnosis of AHF and initial systolic blood pressure > 160 mmHg who received oral antihypertensive medications were included. A total of 1800 patients were screened to achieve a final cohort of 430. Descriptive statistics were compiled and a multi-variable generalized logistic model was used to predict LOS (dichotomized by the median value), dependent on time to first oral antihypertensive, adjusting for positive troponin, age, gender and renal function. Baseline data for our cohort can be found in the Table. The median time to initial oral antihypertensive medication was 5.5 hours (IQR 2.0 10.0 h). The median LOS 3.18 days (IQR 2.0 4.9 d) In adjusted models, odds of having an LOS above the median based were lower based with diminished time to oral antihypertensive medication (OR 0.97 [95% CI 0.94, 0.99]; p = 0.0034). Overall, the model was only modestly predictive of LOS, with an area under the receiver operating curve of 0.60. Our study suggests an association between earlier administration of oral antihypertensive medications in patients with hypertensive AHF and shorter hospital LOS.

Poster: 73

Category: Clinical Vignette

School: Wayne State University School of Medicine

Clerkship Director: Diane Levine, MD, FACP

Presenter: Mo Shirur

Additional Authors: Eloy Ordaya, Mayur Ramesh, George Alangaden, Odaliz Abreu Lanfranco

Having a "Blast" with This Fever: Fever of Unknown Origin in a Transplant Recipient

A 40-year-old male that underwent liver transplant 8-months prior, was admitted for two-day fever, nausea, vomiting, chills. He was started on empiric piperacillin/tazobactam+vancomycin with initial improvement. After negative cultures, antibiotics were discontinued but he developed new episode of fever with intermittent episodes of night sweats, non-productive cough and occipital headaches.

Prior to transplant, he was a traveling nurse in Arizona for 6 months and had few fishing trips to Lake Erie during summertime. Immunizations were up-to-date and PPD was negative.

Baseline chest radiograph showed increased interstitial markings. Follow-up CT showed innumerable tiny lung nodules not present previously, suspicious for atypical infection including miliary tuberculosis and endemic mycosis. Broad spectrum antibiotics were resumed but febrile episodes persisted. He was empirically started on isavuconazole, and fever resolved after day 3.

Bronchoscopic biopsy showed acute fibrinoid and organizing pneumonia with budding yeast, consistent with Blastomyces. Patient was continued on isavuconazole for Pulmonary Blastomycosis and was clinically stable at follow-up at 3 months.

Blastomycosis is a systemic disease caused by *B. dermatitidis*. Symptoms include fever, chills, joint/muscle stiffness and cough with occasional bloody sputum. Most cases occur along Ohio/Mississippi rivers and Great Lakes. Risk factors include travel to endemic regions, perinatal transmission, diabetes mellitus and immunosuppression. Treatment includes antifungals; ketoconazole, fluconazole, itroconazole and amphotericin B.

Blastomycosis is characterized by alveolar or masslike infiltrates on radiography. Other uncommon patterns can include solitary nodules, cavitations, and miliary patterns such as our patient. Differential diagnosis of infectious etiology for miliary pattern include: tuberculosis, histoplasmosis, mycoplasma, nocardia, blastomycosis.

Poster: 74

Category: Clinical Vignette

School: Wayne State University School of Medicine

Clerkship Director: Diane Levine, MD, FACP

Presenter: Kalyan Sreeram

Additional Authors: Courtney M. Moore, MD; Brian Edwards, MD

Take My Breath Away: A Case of Water, Air, and Cognitive Error

Pulmonary Embolism (PE) is a common condition that can have fatal consequences if missed. This case illustrates how it may present amid other concomitant pulmonary pathology.

A 38-year old male presented with unresolved dyspnea one week following an admission to manage decompensated heart failure. Upon admission, he was aggressively diuresed and provided beta-blockade following compensation. Respiratory cultures from his previous admission were positive for MRSA and Pseudomonas. Initial Chest X-Ray (CXR) bilaterally revealed multiple focal airspace opacities, interpreted as “enlarged from previous admission” and “correlating with pneumonia.” Appropriate, sensitivity-based IV antibiotic therapy was started for suspected healthcare associated pneumonia (HCAP). Despite beta-blockade, the patient grew progressively tachycardic, hypoxic, and anxious. Repeat CXR and film review revealed a “Hampton’s Hump.” The interpretation stated “pulmonary infarct vs. pneumonia.” On initial CXR review the Hampton’s Hump was present, but not included in the interpretation. A suboptimal response to treatment led to thorough reevaluation. Physical examination revealed left upper extremity edema, and Doppler studies elicited deep venous thromboses in the same area. V/Q scan noted bilateral perfusion mismatches, corroborating the possibility of PE. Remarkable clinical improvement ensued after starting suitable anticoagulation and therapy for PE.

Several factors may have led to diagnostic delay. Diagnostic momentum fueled treatment for heart failure. Availability bias from respiratory cultures and CXRs contributed to HCAP treatment. Radiologic reliance and satisfaction of search regarding HCAP likely distracted from immediately diagnosing PE despite a persistent pathognomonic “Hampton’s Hump.” Recognition of such factors is paramount to preventing critical diagnostic delays and errors.

Poster: 75

Category: Clinical Vignette

School: Wayne State University School of Medicine

Clerkship Director: Diane Levine, MD, FACP

Presenter: Monica Thipparthi

Additional Authors: Eugene Verkhovsky, M.D., Jarrette Weinberger, M.D.

Guaiaac Negative Hematochezia: An Interesting Case of Shigellosis

A 29-year-old female with past history of recurrent DVT/PE secondary to an unknown hypercoagulable condition, currently on Rivoroxaban, reports two days of nausea, abdominal cramping, hematochezia, and subjective fevers. She presented with similar symptoms previously for which she received a colonoscopy revealing a single polyp. On admission, patient was tachycardic and febrile at 39.4°C. The exam was remarkable for a diffusely tender abdomen. Rectal exam did not demonstrate bleeding or hemorrhoids and patient's. Laboratory tests were notable for a mild leukocytosis and down trending hemoglobin. Fecal immunochemical test (FIT) was negative. Fecal leukocyte antigen (FLA) was positive. Stool samples were also collected for shiga toxin, c. difficile, and bacterial cultures. The leading diagnosis was GI bleed due to anticoagulation. Stool cultures came back positive for shigella sonnei. The patient was prescribed Ciprofloxacin.

This case exemplifies the common diagnostic error of anchoring. There were several factors that could explain the patient's GI bleed, including anticoagulation and previous GI hemorrhagic polyp, which distracted the medical team from considering new causes of acute GI bleed. In addition, the FIT test, with a manufacture-reported sensitivity of 87%, was negative, which raised doubts about the patient's self-reported bloody stools. In reality, the FIT test was a falsely negative result. It is important to recognize that lab tests are fallible and are not superior to patient-reported history.

Poster: 76

Category: Clinical Vignette

School: Wayne State University School of Medicine

Clerkship Director: Diane Levine, MD, FACP

Presenter: Jessica Tsuei

Additional Authors:

An Unusual Mark in Noninflammatory Necrotizing Myopathy

A 40 year-old male with past medical history of fetal alcohol syndrome presented with functional quadriplegia and dialysis dependent renal failure due to necrotizing myopathy of unknown etiology. The patient noticed progressive bilateral leg weakness and myalgias two months prior to admission requiring hospitalization. He was found to be in renal failure secondary to rhabdomyolysis. Muscle biopsy showed type I and II fiber atrophy, myofiber degeneration, regeneration and myophagocytosis without vacuoles, inclusion bodies, or inflammatory infiltrates. He was discharged with steroids, but was subsequently readmitted for a bleeding ulcer that was banded. Work up for progressive upper and lower proximal muscle weakness revealed negative ANA, dsDNA, RNP, Smith, SSB, ANCA, Scl-70, Cryoglobulins, antiGBM with normal C3/C4, however, SSA, anti- Jo-1 and NT5C1A were positive. HRCT was negative for interstitial lung disease. Along with continued dialysis, the patient was treated for necrotizing autoimmune myopathy and was started on Cellcept BID with weekly IV solumedrol and monthly IVIG. Muscle weakness improved, as did renal function, and the patient was able to stop dialysis treatments.

This case is notable for the rare outcome of unaligned serology and findings on muscle biopsy. NT5C1A is an autoantibody that was recently discovered and has only been documented in inclusion body myositis. Anti-Jo1 is associated with inflammatory myopathies such as polymyositis and dermatomyositis. Although it has been documented in necrotizing myopathy in literature, the combination of both anti-Jo1 and NT5C1A are rarely seen if muscle biopsy is negative for inflammatory and mitochondrial causes.

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Category: Clinical Vignette

School: Wayne State University School of Medicine

Clerkship Director: Diane Levine, MD, FACP

Presenter: Elizabeth Ulrich

Additional Authors: Fitsum Kumssa MD, Daniel Moore MD

Streptococcus Mutans Infective Endocarditis: A Rare Presentation

Infective endocarditis is associated with significantly increased morbidity and mortality, and early diagnosis and intervention is critical. A 58 year old Caucasian male presented with intermittent fevers and right flank pain for one month. Routine bloodwork ordered by his PCP identified mildly elevated liver transaminase levels with an ALT of 105 and AST of 44. CT abdomen visualized a 4.3 cm solitary hypodense mass within the right hepatic lobe. On admission, the patient was tachycardiac ranging from 101-123 and febrile at 38.5°C, and a follow-up MRI identified the same mass. These findings were consistent with a hepatic abscess and septicemia. Two blood cultures and hepatic abscess drainage culture identified *Streptococcus mutans*, a type of viridans group streptococci found in normal oral and GI flora and responsible for dental caries, as the causative agent. Given the newly diagnosed hepatic abscess and gram positive bacteremia with intermittent fevers, there was concern for infective endocarditis. Physical exam did not reveal any skin or mucosal lesions, and no regurgitant heart murmur was auscultated. A transthoracic echocardiogram demonstrated no signs of infective endocarditis and noted only moderate mitral regurgitation. A follow-up transesophageal echocardiogram identified a 0.6 cm x 0.6 cm vegetation attached to the atrial side of the mitral valve. This case illustrates a unique presentation of infective endocarditis with the potential for a missed diagnosis. To our knowledge, this is the first reported case of hepatic abscess secondary to *S. mutans* infective endocarditis.

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Category: Clinical Vignette

School: Wayne State University School of Medicine

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When the Heart Bleeds It Does Not Show - A Case of Subtle Cardiac Tamponade

We report the case of a 79 year old woman with a three year history of non-valvular atrial fibrillation with a CHA₂DS₂Vasc score of 6 that has been treated with warfarin for anticoagulation for the past three years for stroke prevention. She was admitted for cardiac tamponade secondary to hemopericardium 11 months after placement of a dual-chamber permanent pacemaker without complications. Transthoracic echocardiogram findings in the emergency room showed moderate circumferential pericardial effusion with early diastolic right ventricular free wall collapse with significant respiratory variation in mitral flow. Patient INR was a therapeutic 2.49 on admission on warfarin which was held one day prior to pericardiocentesis that elaborated 700cc of grossly bloody fluid. Patient's mild symptoms of dyspnea and lightheadedness resolved after the procedure and remained asymptomatic. Only 11 previous cases of hemopericardium have been attributed to warfarin use, which in our patient may have been precipitated by her recent pacemaker placement.

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Category: Clinical Vignette

School: Wayne State University School of Medicine

Clerkship Director: Diane Levine, MD, FACP

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Recurrent Epistaxis: When a Minor Nuisance Indicates a Serious Problem

A 20 year old female, gravida 3 para 1, presented to an outside hospital at 24 weeks and 1 day gestation with complaints of persistent hemoptysis for the last 2 months. These episodes of hemoptysis had increased in severity and frequency over the last few days and were now accompanied with shortness of breath. Significant past medical history included a repaired congenital cardiac defect and recurrent epistaxis which had increased in frequency over the last few months. The patient was transferred to the medical intensive care unit (MICU) at our institution where she presented with tachypnea and hypoxia. She was intubated and started on a wide variety of medical treatments for multiple suspected conditions. On hospital day 4, the fetus began showing signs of distress. It was determined that the patient would not survive cesarean section and the family decided to focus medical attention on the patient. Intra-uterine fetal demise was confirmed on the night of day 4 and the fetus was spontaneously delivered vaginally on day 5. The patient's condition continued to decline even with initiation of sustained low efficiency dialysis (SLED) and continuous extracorporeal membrane oxygenation (ECMO). The patient passed away on day 8. After reviewing the patient's history, family history of similar symptoms in her father, and physical exam findings of 2 arteriovenous malformations, a diagnosis of Hereditary Hemorrhagic Telangiectasia or Osler-Weber-Rendu Syndrome was made. This case illustrates how a minor symptom of recurrent epistaxis can be a harbinger of trouble to come.

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Category: Clinical Vignette

School: Wayne State University School of Medicine

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Posterior Reversible Encephalopathy Syndrome Induced by Acute Pancreatitis

Case Description: A 62-year-old female presented with abdominal pain, nausea, and vomiting. Initial lab results showed a lipase of 525 IU/L. Abdominal ultrasound revealed no evidence of gallstones and the patient denied recent alcohol use. The patient was admitted for symptomatic management of acute pancreatitis of unclear etiology. On the second hospital day, the patient was found having a generalized tonic-clonic seizure, which resolved with the administration of 1mg IV lorazepam. She denied any previous history of seizures. Brain imaging revealed bilateral symmetrical hypodensities in the parietal-occipital lobes, consistent with posterior reversible encephalopathy syndrome (PRES). The patient was started on levetiracetam for seizure prophylaxis. One month following discharge, the patient reported no recurrent seizure-like episodes. Follow-up MRI of the brain showed radiographic resolution of PRES.

Discussion: PRES is commonly caused by severe hypertension, and generalized tonic-clonic seizures occur in 60-75% of patients. The pathophysiology of PRES is hypothesized to involve endothelial dysfunction. A sudden increase in blood pressure may exceed the upper limit of cerebral blood flow autoregulation, resulting in hyperperfusion and subsequent vasogenic edema. However, studies have noted that 15-20% of patients diagnosed with PRES were normo or hypotensive, such as in this case. Pancreatitis has been identified as a trigger for PRES in isolated case reports. It is hypothesized that the increase in circulating inflammatory cytokines and pancreatic enzymes affects cerebral blood vessels, producing vasogenic edema. Patients with PRES may benefit from maintaining lower blood pressures, and anticonvulsants should be used until the resolution of neuroimaging findings.