

# ABSTRACTS FROM THE 2019 ANNUAL LOUISIANA AMERICAN COLLEGE OF PHYSICIANS ASSOCIATES MEETING

Each year medical students from the four medical schools and residents from the eight Internal Medicine training programs in Louisiana are invited to submit abstracts for the Annual Louisiana American College of Physicians (ACP) Associates Meeting. The content of these abstracts includes clinical case vignettes or research activities. The abstracts have all identifying features removed (i.e., names, institutional affiliations, etc.) before being sent to physician judges. Each judge scores each abstract independently and then the scores from all judges are averaged and ranked. This year we are excited to be able to publish the 15 most highly ranked abstracts presented at this year's competition that were selected for oral presentations. An Additional 12 abstracts presented as posters (out of 92 total) were selected by judges for publication. All abstracts (15 oral and 12 poster) were presented at the Associates Meeting held at The Louisiana Cancer Research Center in New Orleans on January 22, 2019. We would like to thank the *Journal of the Louisiana State Medical Society* and appreciate its efforts to publicize the hard work of these trainees.

Shane Sanne, DO  
Chair, Louisiana Associates Liaison Committee  
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## METASTATIC EMBRYONIC CARCINOMA: AN ATYPICAL TRIGGER FOR ACUTE PANCREATITIS

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\*Presented as a mystery case

**Introduction:** Acute pancreatitis is sudden inflammation of the pancreas that may be mild or life threatening. The usual causes include hypertriglyceridemia, alcohol abuse, and obstructing gallstones or pancreatic mass.

**Case:** A 29 year old man with a past medical history of pancreatitis presented with abdominal pain, which began three days prior to admission. He complained of nausea, vomiting, dark color urine, and epigastric pain. Physical examination demonstrated diffuse abdominal tenderness and palpable right and left

inguinal lymph nodes. An abdominal CT revealed bulky retroperitoneal conglomerate masses and peritoneal lymphadenopathy. Fine needle aspiration and biopsy of the mass revealed reactive lymphadenopathy raising concerns for metastatic carcinoma. Furthermore, labs illustrated elevations in alpha fetoprotein, LDH, and BhCG. MRI/ MRCP then revealed a massive necrotic retroperitoneal mass that was impinging the proximal common bile duct. Gastroenterology was consulted and a biliary stent was placed by ERCP. Although testicular/ scrotal ultrasound revealed no masses, it is being considered as the primary source of the metastatic mass due to additional stain results. Pathology results showed that the mass was SALL4 (positive), and OCT3/4 (focally positive). These results were suggestive of a metastatic carcinoma with embryonic carcinoma and less likely of other extragonadal germ cell tumors. Per recommendations from Hematology/ Oncology, the treatment plane for the

patient included a total of 4 cycles Bleomycin, Etoposide and Cisplatin with follow up CT scans and possible surgical consultation if residual mass is present after chemotherapy.

**Discussion:** In a young, otherwise healthy patient, it is tempting to ascribe pancreatitis to benign, common causes. However, if the history is unrevealing for these underlying causes, a thorough search is necessary. Unanticipated metastatic embryonic carcinoma causing obstructive lymphadenopathy is an extremely rare cause of pancreatitis, but malignancy of all causes deserves to be on the differential diagnosis.

## ATYPICAL PRESENTATION OF SARCOIDOSIS: UNILATERAL SUPRACLAVICULAR LYMPHADENOPATHY

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\*Presented as a mystery case

**Introduction:** Sarcoidosis is a systemic granulomatous disease of unknown etiology that can affect any organ system. Hilar and mediastinal lymphadenopathy is a common manifestation, however other causes of lymphadenopathy must be ruled out in a stepwise approach.

**Case:** A 34 year old male quarry worker with significant exposure to granite for 15 years presented with a palpable non-tender mass on the left side of his neck for 2 months. During this time, he also had subjective fevers, drenching night sweats and a 30 lb. unintentional weight loss. The patient denied dysphagia, dyspnea, cough or other upper respiratory symptoms. He endorsed occasional marijuana use and had tested negative for HIV within the past 2 years. He also reported intermittent redness and burning sensation in his eyes for the past 1 year. He stated that he used a surgical mask at work, but did not use a respirator. Physical examination revealed a mobile, non-tender, rubbery mass on the left side of his neck extending from the midclavicular line to the sternocleidomastoid muscle. Electrolytes and CBC were unremarkable, HIV and Quantiferon Gold were negative. His ACE level was elevated. Neck CT showed cervical, left supraclavicular and mediastinal lymphadenopathy with a mass effect on the left subclavian vein and numerous collaterals in the left neck and shoulder. It also showed bilateral ground glass nodular infiltrates. Excisional biopsy of the left cervical lymph node demonstrated noncaseating granulomas.

**Discussion:** Sarcoidosis is an inflammatory systemic disease characterized by noncaseating granulomas. Cervical lymphadenopathy as the initial presentation of sarcoidosis is rare, adding to the difficulty in diagnosis. Furthermore, our patient presented with B symptoms increasing the possibility of malignancy. Sarcoidosis was diagnosed

based on the clinical presentation and demonstration of non caseating granulomas in the lymph nodes. This case highlights the presentation of sarcoidosis with supraclavicular lymphadenopathy and the possible environmental and occupational risk factors for sarcoidosis. Prompt recognition and management of anterior uveitis is important to prevent long term complications of uveitis.

## RARE CASE OF ACUTE ESOPHAGEAL NECROSIS SECONDARY TO DIABETIC KETOACIDOSIS (GURVITS SYNDROME)

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\*Presented as a mystery case

**Introduction:** Acute esophageal necrosis is a life-threatening condition. It is a rare disease with an incidence ranging from 0.01% to 0.28% of all upper GI endoscopies. Upon review of the English literature, only 14 cases of AEN associated with DKA have been published over the past 50 years. We present a case of AEN associated with DKA.

**Case:** A 61 year old man with a history of hypertension, hyperlipidemia, type 2 diabetes, peptic ulcer disease, tobacco use, alcohol abuse, and obesity presented to the hospital with severe shortness of breath, worsening back pain and acid reflux symptoms. His vitals on admission were 97.8 F, blood pressure 183/85, heart rate 141 beats per minute, respiratory rate 31/min, and oxygen saturation at 99% on room air. On physical examination he had dry mucous membranes and tachycardia. His laboratory findings showed blood glucose of 833 mg/dL. ABG showed pH of 7.164, pCO<sub>2</sub> of 11.1 mmHg, HCO<sub>3</sub> of 4 mEq/L, and PO<sub>2</sub> of 128 mmHg with an anion gap of 25. Serum Beta-Hydroxybutyrate of 4.9 mmol/L, 2+ urine ketones, (WBC) of 30.2 K/uL, Hb 13.5, potassium of 5.8, BUN 31 with Creatinine of 2.7. CXR was unremarkable and patient was started on an insulin drip. On day 2, he developed hematemesis without melena or hematochezia. On day 3, he continued having hematemesis and dysphagia. The next day Hb decreased from 12.8 to 10.7 g/dL and he had chest discomfort. Endoscopic evaluation revealed severe necrotic esophagitis along the entire esophagus with gastric and duodenal mucosa. Patient was started on oral (PPI) therapy and oral sucralfate therapy. The patient's DKA resolved and he was discharged on 6 weeks of oral PPI and sucralfate therapy with plans for repeat EGD outpatient.

**Discussion:** It is important to diagnose AEN in the setting of DKA as it is associated with increased disease-specific

mortality which could be decreased given appropriate precautions and treatment. Complications can include esophageal perforation, mediastinitis, and abscess formation which can be seen in up to 6% of cases. Late complications include esophageal strictures and stenosis which are seen in 10.2% of cases and may appear as early as 7-12 days after diagnosis. Mortality is as high as 32% with underlying co-morbidities and the mortality specific to AEN is closer to 6%.

## A RARE CASE OF BLADDER CANCER

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**Introduction:** Cancer with an unknown primary is common, accounting for 4 to 5 percent of all invasive cancers. Neuroendocrine tumor (NET) of the bladder is exceedingly rare, accounting for 0.5% of all bladder tumors. NET is classified into 2 subtypes: carcinoid tumor and neuroendocrine carcinoma. Neuroendocrine carcinoma is further subdivided into small cell carcinoma (SCC) and large cell neuroendocrine carcinoma, the latter of which is exceedingly rare in the bladder.

**Case:** A 36 year old man without previous medical history who presented with gross hematuria for 2 days associated with urgency, frequency, hesitancy, dysuria, penile pain and left flank pain. He had no personal history of kidney disease nor occupational exposures. He was afebrile with normal vitals and liquid labs revealed a mild paraproteinemia with a gap of 4.3, a baseline BUN and Creatinine of 21 and 1.3 respectively. UA was red tinged, with 2+ protein, 3+ occult blood, trace ketones and micro revealed >100+ RBC's. Urine and blood cultures were without organisms. CT abdomen/pelvis revealed left hydronephrosis and hydroureter with renal cortical atrophy consistent with chronic obstruction. CT urogram revealed no pyelogram on the left, due to a 7.5 x 5.5 cm mass along the left posterolateral bladder wall separate from prostate obstructing the left distal ureter. Within a month his symptoms progressed to chronic hematuria and recurring obstruction, requiring nephrostomy tube placement, ureteral stenting, biopsy of bladder mass and subsequent TURBT with clot evacuation and fulguration. Further cancer screening did not reveal a primary source for his malignancy. Pathology demonstrated an invasive high-grade malignant neoplasm with a neuroendocrine differentiation, staining positive for synaptophysin, CD56 with a Ki67 proliferative index of ~70-75%. Tumor was negative for CK7, CK20, CD 45PSA, PSAP, AE1/AE3 and RCC.

**Discussion:** Bladder cancer is often reported in Caucasians in their 7th or 8th decade of life and is often associated with tobacco abuse. This case discusses an aggressive lesion in a young man without tobacco use. <1% of cancers are described as Neuroendocrine in origin. Their occurrence in the bladder is rare and often diagnosed in an advanced stage with a poor prognoses. NET can be further subdivided into large and small cell carcinomas, neither of which are reported here.

## WHY IT IS ESSENTIAL TO THINK TWO MOVES DOWN THE CHESS GAME

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**Case:** A 64 year-old woman with a history of essential thrombocytosis presented with dyspnea. The clinical examination was consistent with a diagnosis of acute CHF. A peripheral smear revealed thrombocytosis with blasts, raising concern for acute myeloid leukemia with blast crisis. Given the risk for hyperuricemia secondary to tumor lysis, rasburicase was prescribed.

On the next day, she developed hypoxia refractory to diuresis. Initially ascribed to worsening heart failure, however, an ABG revealed a PaO<sub>2</sub> of 300 mmHg despite an arterial saturation of 80%. The discordance between the PaO<sub>2</sub> and the arterial saturation combined with recent rasburicase exposure indicated methemoglobinemia. Methylene blue and ascorbic acid were administered. On hospital day three, an acute drop in her hemoglobin concentration suggested hemolytic anemia. G6PD deficiency was confirmed as the cause and was thought to be precipitated by methylene blue. Attempts were made to establish an exchange transfusion, but her condition deteriorated rapidly, resulting in cardiac arrest and death.

**Discussion:** Tumor lysis is a common complication, especially for patients with high tumor burden or myeloproliferative disorder. Given the frequency that these patients are admitted to the hospital, the prophylactic administration of agents like rasburicase is often done without consideration for potential side effects. Methemoglobinemia occurs in less than one percent of patients who take rasburicase. The treatment for methemoglobinemia is methylene blue. Patients with G6PD deficiency are highly susceptible to acute hemolytic anemia post methylene blue administration.

## BLOOD, BILE, AND BLOCKAGE: AN ATYPICAL CAUSE OF PANCREATITIS

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**Introduction:** Acute pancreatitis is a common clinical diagnosis that often presents with abdominal pain, systemic inflammatory symptoms, and an elevation in pancreatic digestive enzymes. Most cases are alcohol or gallstone related. However, there are numerous pathophysiological mechanisms that can contribute to pancreatitis including metabolic, infectious, obstructive, autoimmune, and toxic related processes. This case reviews a typical presentation of obstructive pancreatitis with an atypical etiology.

**Case:** A 61-year-old woman with a past medical history of HIV and Hepatitis C presented with a chief complaint of right-upper-quadrant pain. Two days prior, she underwent a transjugular liver biopsy for cirrhosis staging. On initial presentation, she was afebrile with severe right-upper-quadrant tenderness. Laboratory evaluation revealed a lipase of 3174 U/L, total bilirubin of 3.4mg/dL, AST of 183 U/L, and ALT of 117 U/L. RUQ ultrasound was consistent with choledocholithiasis suggesting a diagnosis of gallstone pancreatitis. Subsequent ERCP revealed a thrombus extruding from the ampulla, and a sphincterotomy was performed and thrombus extracted. She clinically improved and was discharged with a diagnosis of hemobilia pancreatitis. Five days later she returned after a syncopal episode with a hemoglobin of 5.1 g/dL. Without a definitive source for bleeding, she underwent an interventional angiogram revealing a right hepatic artery to portal vein arteriovenous fistula that was subsequently coiled. The final diagnosis was hemobilia pancreatitis secondary to arteriovenous fistula leading to biliary tract obstruction.

**Discussion:** Transjugular biopsy is a procedure that offers patients with coagulopathy or ascites an alternative to percutaneous liver biopsy. Benefits include avoiding peritoneal and liver capsule injury. Manipulation of the portal vein during biopsy is associated with hemobilia and fistula formation

due the proximity of the intrahepatic bile duct, hepatic artery, and portal vein. Hemobilia can lead to thrombus formation and pancreatitis due to biliary tract obstruction. Classically this presents as Quincke's triad of right upper quadrant pain, jaundice, and gastrointestinal hemorrhage. Removal of the obstruction and arterial embolization are regarded as the standard of care. This case represents the importance of understanding the

diseases. While hemobilia pancreatitis is rare, the pathophysiology is similar to the common etiology of gallstones. Both are obstructive processes that initiate an inflammatory cascade within the pancreas. By recognizing that the patient had an obstructive process, she was able to receive proper evaluation and therapy.

## LUNG CANCER SCREENING – IS 55 TOO LATE?

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**Introduction:** In 2014 24% of adults in Louisiana reported having had a history of smoking. Lung cancer was the most common cancer and the leading cause of cancer related deaths in Louisiana from 2010 to 2014. It has been estimated that 3510 new cases of lung cancer were diagnosed in Louisiana in 2017, with an estimated 2610 patients dying of lung cancer. The USPSTF recommends annual screening for lung cancer with low-dose computed tomography in adults between the ages of 55-80 years who have a 30-pack-year smoking history and currently smoke or have quit within the past 15 years.

This study was designed to look at the age of patients initially diagnosed/treated at UHC in Lafayette, LA with lung cancer in 2017 and see if there was a statistically significant population that had lung cancer who did not meet lung cancer screening criteria. University Hospitals and Clinics in Lafayette, LA directly services the Louisiana parishes of Acadia, Iberia, Lafayette, St. Landry, St. Martin, and Vermillion.

**Methods:** A retrospective analysis of the lung cancer patients that were diagnosed/treated at UHC in 2017 was performed. Charts of the patients were evaluated with the age of diagnosis of lung cancer documented.

**Results:** In 2017, fifty-eight patients were diagnosed/initially treated at UHC for lung cancer. The age at the time of diagnosis ranged from 46-70 years. Fifteen of the 58 patients diagnosed were between the ages of 46-55 years. Following guidelines set by the USPSTF for lung cancer screening, 25.8% of the patients seen at UHC would not have been screened or screened early enough to diagnose lung cancer at a more treatable stage.

**Conclusions:** The USPSTF has set the age to begin annual screening for lung cancer at 55 years. In the lung cancer patients

diagnosed/initially treated at UHC in 2017, if screening were to begin at age fifty, 57/58 of our patients would have been eligible for screening. This would have led to earlier diagnosis and potential better outcomes.

## OCHROBACTRUM INTERMEDIUM : A CASE OF BACTEREMIA ASSOCIATED WITH DECOMPENSATED CIRRHOSIS

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**Case:** A 56-year-old woman with a history of alcohol abuse presented with 3 days of fevers, abdominal pain, and emesis. Exam was remarkable for generalized muscular tenderness. Labwork revealed white blood cell count 2.6, hemoglobin 9.9, platelets 27, albumin 1.8, bilirubin 4.6, AST 97, and ALT 28. Imaging demonstrated cirrhosis, peri-splenic varices, and an atrophic pancreas with a focus of gas in a dilated pancreatic duct. She was treated for alcohol withdrawal. She developed fever, tachycardia, became obtunded and was found to have leukocytosis to 18 with a lactate of 2.9. Vancomycin, ceftriaxone, piperacillin/tazobactam and levetiracetam were given. Lumbar puncture, MRI brain, electroencephalogram, urine and respiratory cultures were unremarkable. Blood cultures from two sites grew *Ochrobactrum intermedium* sensitive to fluoroquinolones and aminoglycosides but resistant to beta-lactams except for carbapenems. Repeat abdominal imaging did not reveal an infectious nidus. She received ciprofloxacin at 750mg twice daily for two weeks with clinical cure.

**Discussion:** *Ochrobactrum* are gram-negative rod-shaped flagellated bacteria most similar to *Brucella* species. *O. anthropi* was first described in 1988 as normal colonic flora, but is now a recognized opportunistic pathogen. A decade later, *O. intermedium* was discovered. Cases are limited but include a patient with *O. intermedium* septicemia due to cholangitis a month after orthotopic liver transplant. Another case describes a man with end-stage renal disease on immunosuppression undergoing hemodialysis through a long-term catheter after a failed transplant developed endocarditis with a right atrial vegetation due to *O. intermedium*. A 6-week course of meropenem and minocycline achieved cure. Additional cases include endophthalmitis due to intraocular foreign body, and bacteremia



in a patient with bladder cancer. *O. intermedium* is susceptible to imipenem, ciprofloxacin, and trimethoprim-sulfamethoxazole, but resistant to penicillins and cephalosporins.

**Conclusion:** There are few documented cases of *O. intermedium*. This is one of the first with bacteremia in the absence of malignancy or immunosuppressant medication. Many were likely classified as *O. anthropi* previously. Hospital Medicine physicians should recognize *Ochrobactrum* as an opportunistic pathogen which can cause life-threatening infection particularly in immunocompromised hosts.

## **BILIARY CANDIDIASIS CAUSED BY CANDIDA GLABRATA IN PATIENT WITH PANCREATIC MALIGNANCY**

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**Introduction:** Acute cholangitis presents with fever, right upper quadrant pain and jaundice. Although many causes are due to bacterial translocation in biliary tree, fungal infections are also seen. Risk factors include immunocompromised state, malignancy, diabetes, and chemotherapy. We present here a case of a patient with biliary candidiasis from *Candida glabrata*.

**Case:** A 68-year old man with history of type 2 diabetes, Hepatitis C, and tobacco use admitted for jaundice, intense pruritus, dark urine and weight loss of 30lbs over 1 month. Labs were significant for T bili 32.4, AST 61, ALT 62, ALP 201, lipase 3,300. CT showed a 2.5 x 3.6 cm pancreatic head mass, enlarged gallbladder and CBD diameter 1.1cm. ERCP showed distal CBD stricture 3-4cm in length with bile duct obstruction. Plastic stent placed, T bili trended down. Three days later, repeat ERCP performed with metal stent placement. EUS with FNA of pancreatic head confirmed malignancy. Patient was not surgical candidate. After second ERCP, T bili and LFT's worsened, patient became oliguric with worsening creatinine function. Urinalysis confirmed large bilirubin crystals and blood. The patient became hypoxic, hypotensive, anuric and altered. He was started on vasopressors and CRRT, with improvement in creatinine. The patient went into acute liver failure with transaminitis and elevated INR. RUQ US findings were suggestive of a malpositioned stent. IR placed percutaneous cholecystostomy tube which drained thick dark bile. Despite aggressive management for septic shock, the patient's condition deteriorated and he expired. Gallbladder aspirate grew *Candida glabrata*.

**Discussion:** Systemic and localized candida infections are common in patients with certain predisposing factors such as neutropenia, malignancy, advanced diabetes mellitus, and immunocompromised status. Biliary

candidiasis is very rare even in patients with systemic candidiasis. Patients typically present as acute cholangitis. According to Domargk et al, 29% of the patients present as biliary obstruction similar to our case presentation. Labs generally are remarkable for conjugated hyperbilirubinemia. Diagnosis is made via obtaining culture and sensitivity of biliary fluid sampled through ERCP, cholecystectomy and/or percutaneous cholecystostomy. Management includes source control and antifungal therapy. Unfortunately in our patient, diagnosis was confirmed after he expired due to worsening septic shock.

## **METASTATIC HEMANGIOPERICYTOMA OF THE LUNG**

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**Introduction:** Hemangiopericytomas are a phenotype of solitary fibrous tumors which are considered malignant tumors of the central nervous system (CNS) and account for less than 1% of all CNS tumors. Patients often present with neurologic symptoms from the mass effect or edema within one year of tumor development due to the rapid onset of these biologically aggressive tumors. Treatment modalities generally include resection, radiation therapy, and adjuvant chemotherapy. However, these tumors have a high rate of local recurrence even after gross complete resection. Hemangiopericytomas also have a high propensity to metastasize along the neuraxis to extracranial structures (e.g. lung, bone) in about a quarter of the cases.

**Case:** Here we describe an interesting case of a 52-year-old female, who was diagnosed with hemangiopericytoma and had a complete resection performed. She was found to have local CNS recurrence nine years after the initial surgery. She underwent repeat resection with adjuvant radiation therapy. At the same time, she was noted to have bilateral pulmonary nodules but was lost to follow up. She presented again with neurological symptoms two years later and was found to have enlarging pulmonary nodules. Navigational bronchoscopy was performed which was non-diagnostic for malignancy. One week after bronchoscopy, she presented with hemoptysis and underwent robot assisted right upper lobectomy as the mass was suspected to be the source. Surgical pathology revealed metastatic hemangiopericytoma with presence of NAB2-STAT6 fusion by immunohistochemistry.

**Discussion:** This case highlights the aggressive nature of hemangiopericytoma and the ability to metastasize. The rates of extracranial metastases are approximately 28% with about 18%

of those to lung and pleura. This case was classified as WHO Grade III based on the pathology; however, there is no correlation to metastasis potential based on grade as metastasis is seen in all tumor grades. Despite the acceptance to long term follow up and high clinical suspicion for metastasis, there are no established protocols or guidelines for surveillance. Development of an established protocol is needed as there is currently a wide variation in clinical practice for follow up.

## **AN UNKNOWN CASE OF STROKE**

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**Case:** A 23-year-old woman with past medical history of bipolar disorder presented with complaints of left-sided weakness, headache, and numbness for 1 week. She initially presented to another facility where she was treated symptomatically. She then presented to our hospital because the above unrelenting symptoms. Left sided weakness was associated with ambulation difficulties. She reported falling several times. She also endorsed having throbbing, migraine-like headaches that began 1 month prior to admission, located in entire frontal region and top of her head with associated photosensitivity and vision changes. She was evaluated in the ED and noted to have left sided weakness, numbness, lethargy and headache. CT head excluded acute intracranial hemorrhage. Due to low grade fever, lethargy and headache, she was started on vancomycin, acyclovir, and ceftriaxone for empiric treatment of meningoencephalitis. MRI brain showed bilateral periventricular white matter foci suggestive of demyelinating disease, with active plaque formation in the area of enhancement on restricted diffusion images. Lumbar puncture showed the presence of oligo clonal bands. CSF cultures were negative at 48 hours. At this point, she was started on high dose steroids. All antimicrobials were rapidly deescalated. She then had complete resolution of symptoms over the next few days and she regained her ability to ambulate. She was discharged with a diagnosis of multiple sclerosis.

**Discussion:** Multiple Sclerosis (MS) is a heterogeneous disorder with an unknown cause that manifests itself in a variety of ways. Symptoms are often caused by inflammation, demyelination, and axonal degeneration. MS is associated with autoreactive lymphocytes, microglial activation and chronic neurodegeneration. Initial manifestation is a clinically isolated symptom that can develop in an acute or subacute manner. However, as the disease can progress in various ways; MS is characterized into subtypes based on progression. This

case exemplifies how Multiple Sclerosis can present acutely with neurological features that are consistent with other diseases such as an acute stroke. A high index of suspicion is needed in cases of unresolving symptoms of stroke to make a correct diagnosis with complete neurological recovery.

### **UTILIZATION OF NIVOLUMAB IN ADENOID CYSTIC CARCINOMA AFTER PROGRESSION ON PLATINUM BASED CHEMOTHERAPY**

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on platinum based chemotherapy. To date, no study has evaluated the efficacy of immunotherapy in ACC. Our patient demonstrated a survival of 3 month following the administration of Nivolumab after progressing on first line treatment. This case illustrates the difficulty in identifying ACC and the importance of a thorough workup. The use of Nivolumab may serve as an option to extend survival in patients with ACC.

**Case:** A 22-year-old man presented with a 6-month history of nasal congestion, epistaxis and rhinorrhea for which he had been seen multiple times. He received multiple doses of antibiotics and steroids with no improvement. Physical exam showed no abnormalities, except for sinus tenderness. Given his recurrent symptoms, a non-contrast CT of the sinuses revealed a mass with erosion of the lateral wall of the nasal cavity, lateral wall of the maxillary sinus and pterygoif plates. PET scan confirmed a metastatic disease in the right iliac crest and right cervical lymph node; biopsy was consistent with adenoid cystic carcinoma (ACC) nasopharynx. Patient received proton therapy to the main lesion and intensity-modulated radiotherapy (IMRT) to the iliac bone lesion with concurrent cisplatin. Four months later, a new metastasis in the right ischium was found, and stereotactic irradiation treatment was initiated. Genetic profiling located MDM2 mutation. He completed a Phase 1 Trial focusing on this targetable mutation but had progression of disease (PD) with new lung metastasis. He went onto a second trial utilizing DS3032b (a MDM2 inhibitor) but subsequently had PD. Patient was then started on Nivolumab and died twelve weeks later.

**Discussion:** ACC comprises approximately 10% of all neoplasms of the salivary glands. The rarity of this condition makes diagnosis challenging. High mortality rates in ACC is due to late distant metastases and local recurrences. ACC treatment is usually considered palliative, as there is no strong evidence that survival is extended by systemic chemotherapy. Immunotherapy has been utilized in the treatment of metastatic and recurrent head and neck cancers and have shown clinically significant activity in those who have progressed



## COCCIDIOIDOMYCOSIS

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**Case:** A 28 year old man with who worked as a laborer and had a history of tobacco use presented with a 7 day course of intermittent high-grade fevers associated with sweats and generalized body aches which he described as "bone pain" and mild nausea without vomiting. He emigrated from Mexico 3 years prior and had no other recent travel. On physical exam, his vital signs were BP 123/51mmHg, pulse 123 bpm, Temp 100.5° F, Resp 22/min, SaO2 100% on room air. He was diaphoretic, with shallow breathing, but lungs were otherwise clear to auscultation. The remainder of his exam including neuro exam was unremarkable. Shortly after admission, he became hypotensive (88/49 mmHg) and he was not responsive to a 4L fluid bolus. He required presser support and was transferred to the ICU. Labs were significant for Leucopenia (26% bands, 63% neutrophils, 10% Lymph), thrombocytopenia, BUN 28 mg/dl, Cr 1.88mg/dl, transaminitis and elevated bilirubin. Computed tomographic imaging of the chest revealed a solitary necrotic nodule with fluid and gas. AFB smear and T.Spot were negative. He was treated for lung abscess and discharged. Further laboratory studies returned including Leptospira IgM which was positive but PCR was negative. Coccidioides antibodies IgM and IgG were positive. Repeat CT chest did not show improvement and lung biopsy was performed. Fungal culture from biopsy material grew *Coccidioides immitis/posadasii*.

**Discussion:** Coccidioidomycosis is an infection caused by the dimorphic fungi of genus *Coccidioides*. Most infections are caused by inhalation of spores. The clinical expression of disease ranges from self-limited acute pneumonia to disseminated disease, especially in immunosuppressed patients. In the United States, most cases are concentrated in southwest. Less than one-half of all infections come to medical attention because illness is often subclinical. Primary infection manifests as CAP approximately 7-21 days after exposure. Most common

symptoms are chest pain, cough and fever. Routine laboratory findings are frequently unremarkable. Common radiographic abnormalities include unilateral infiltrate and ipsilateral hilar adenopathy. In general, mild disease does not require antifungal therapy. Therapy with either fluconazole or itraconazole is recommended for patients who are at higher risk of developing severe disease.

## RECURRENCE OF DIFFUSE LARGE B CELL LYMPHOMA PRESENTING AS ACUTE PANCREATITIS

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**Introduction:** Diffuse large B cell lymphoma (DLBCL) is the most common subtype of non-Hodgkin lymphoma (NHL) accounting for nearly a third of all cases. Disease can arise in either nodal or extranodal tissues. Extranodal extramedullary tissue account for nearly 40% with the most common site being the primary extranodal disease of stomach/gastrointestinal tract. However diffuse large B cell lymphoma presenting as acute pancreatitis is quite uncommon.

**Case:** A 36 year old man with past medical history of treatment naïve Hepatitis C, and alcoholic induced cirrhosis, diffuse large B cell lymphoma GCB subtype presents to the Emergency Department for sharp epigastric pain with radiation to the back. Lipase was within normal limits but CT scan showed a soft tissue density mass in the region of the portacaval space measuring 4.6 x 2.8 cm in greatest dimension. Of note, the patient previously had CT scan that showed 11 cm mass in retriaperitoneum anteriorly displacing the head of the pancreas. CT-guided biopsy of mass showed DLBCL of the GCB subtype. R-bendamustine chemotherapy was initiated followed by 5 cycles of R-CHOP and ISRT after which repeat CT did not show any evidence of disease. With these persistent symptoms and history of lymphoma, PET CT was performed and biopsy of recurrent mass showed recurrence. A decision was made to proceed with R-DHAP salvage therapy. Initially, the tumor showed some response to the therapy, however the patient was unable to tolerate the side effects with worsening hepatic function with increasing biliary and pancreatic duct dilatation. Subsequently biliary drain was placed to relieve the strictures and extrahepatic compression of the tumor with initial down trend of LFT's and improvement in bilirubin. Shortly there after the drain became infected, requiring long term antibiotic therapy. Initial plans of auto-hematopoietic stem

cell transplantation were canceled as patient started to develop hepatic failure and renal failure, and became too weak to continue with the treatment plan. After discussion with the patient and his family, a decision was made to initiate hospice in accordance to patient's wishes.

**Discussion:** Literature review revealed only a handful of cases with B-cell lymphoma presenting as acute pancreatitis. This case is even more unique in that despite it being a Stage 1A lesion, the cancer initially responded to treatment, however recurred and ultimately resulted in the death of the patient.

## **THE ZEBRA OR THE HORSE: CHALLENGES IN DIAGNOSING PYLEPHLEBITIS**

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**Introduction:** Acute non-cirrhotic portal vein thrombosis is an uncommon condition which usually presents with abdominal pain as well as small volume ascites. While most cases are related to an underlying hypercoagulable state, it can also be associated with intraabdominal inflammatory conditions such as pancreatitis, cholecystitis, appendicitis and diverticulitis. This case illustrates the difficulty of diagnosing pylephlebitis and the high degree of suspicion often required for diagnosis.

**Case:** A 59 year old woman with CAD presented to the ED with RUQ abdominal pain for the past five days. She reported associated chills, dyspnea, nausea and emesis. On exam, she exhibited only mild right upper quadrant tenderness. Labs revealed mild leukocytosis, transaminitis, AKI, elevated alkaline phosphatase, and mild normocytic anemia. Abdominal CT scan revealed thrombosis of the intrahepatic portion of the right portal vein and anticoagulation initiated for acute non-cirrhotic portal vein thrombosis. She denied any personal or family history of thrombotic events, and a work up for hypercoagulable states including APLA, PNH, JAK-2 mutation was negative. She clinically improved and was discharged on rivaroxaban. She represented to the ED five days later complaining of subjective fever, chills, dyspnea, and near syncope, requiring a brief stay in the ICU as her blood pressure and heart rate remained labile despite aggressive volume resuscitation and empiric antibiotics. Given her symptoms along with persistently elevated transaminases and alkaline phosphatase, MRCP was obtained which revealed the previously identified portal vein thrombosis but suggested pylephlebitis with hepatic microabscesses. She clinically improved after modification of her antibiotics and remained hemodynamically stable with resolution of her transaminitis. Rivaroxaban was discontinued, and she was discharged to complete an extended course of antibiotics.

**Discussion:** Pylephlebitis, or infective suppurative thrombosis of the portal vein, is an uncommon complication of primary intraabdominal infection, occasionally with the source of infection being unapparent as in our case. It results from thrombophlebitis of surrounding small veins at the site of infection which ultimately propagates to involve the portal vein. Although pylephlebitis is a rare clinical entity, abdominal pain and fever are frequently encountered clinical symptoms. Modern imaging and microbiologic techniques have improved the detection rate of pylephlebitis, yet morbidity remains high. Therefore, prompt diagnosis and treatment is essential. Anticoagulation is recommended in certain circumstances. Clinicians should remain vigilant in suspecting the unusual while treating the usual.

## **HYPONATREMIA SECONDARY TO PANHYPOPITUITARISM IN A PATIENT WITH A HISTORY OF SIADH**

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**Introduction:** Non-pituitary intrasellar neoplasms, though less common than pituitary adenomas, can cause hypopituitarism via mass effect and compression of neighboring structures. Mass effect can also lead to panhypopituitarism. Hyponatremia secondary to panhypopituitarism mimics SIADH, but the hyponatremia is typically corrected after administering thyroxine and corticosteroids. We present a rare case of hyponatremia in a patient with a history of SIADH where a recurrent meningioma was the true culprit.

**Case:** A 51 year old woman presented to the emergency department for tinnitus associated with her chronic headaches. She was found to have a Na of 116 and due to concern for hypovolemic hyponatremia was given 1 L of NS. Her Na decreased from 116 to 113 and she was admitted to the MICU. She had a PMH of SIADH with NA levels recorded in the 130's, hypothyroidism, and meningioma resection. Head CT without contrast showed possible recurrence of meningioma. Patient was then given salt tablets, free water restricted, and started on her home dose of levothyroxine. She remained stable and was transferred to the floor. But, she was readmitted to the MICU the next day due to decreased level of consciousness, hypotension, increased somnolence. She was started on 3% hypertonic saline bolus, and her blood pressure increased. Considering differentials such as SIADH, hypothyroidism, adrenal insufficiency, or hypopituitarism, stress dose steroids were administered. Sodium initially dropped, but then started trending up. The dosage was decreased to 20mg AM/10mg PM once her sodium was around 120. The patient was found to have a high TSH, low free T4, FSH, IGF-1, and morning cortisol consistent with hypopituitarism. Brain MRI with contrast revealed invasion of sella and mass effect on pituitary gland as well as encasement of left cavernous internal carotid artery. Imaging and labs suggested panhypopituitarism as the

cause for the patient's hyponatremia.

**Discussion:** Hyponatremia secondary to a neoplasm is typically a diagnosis of exclusion. Initial symptoms of mass effect on the pituitary gland include irregular menstrual periods, infertility, decreased libido, and erectile dysfunction. As the tumor causes more compression, the more severe consequences include the effects of hypothyroidism and low cortisol (low blood pressure, confusion, nausea, vomiting, and fever) some visualized without patient. Early detection via process of elimination taking all differentials into account is the key to ensuring a positive outcome.

## **A CRYPTOGENIC CASE OF PNEUMONIA**

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**Introduction:** Pneumonia is one of the most common presentations in both the inpatient and outpatient settings. We present here a very interesting case of pneumonia caused by both *Cryptococcus* and *Strep gordonii*.

**Case:** A 43 year old African-American woman with no significant past medical history presents with SOB, cough, and left-sided chest pain for 10 days. She presented to the ER 7 days prior to admission with bronchitis. She returned 5 days later with similar symptoms. CXR revealed left lower lobe pneumonia and she was discharged with oral Levaquin. She continued to endorse worsening of symptoms, which prompted her to return to the hospital. CT Chest revealed left basilar consolidation, moderate left pleural effusion, and fluid along the left fissure concerning for possible developing empyema. Pulmonology was consulted and recommended chest tube placement and obtaining cultures. IR placed a chest tube and sent pleural fluid samples for studies. She was treated empirically with Vancomycin, Pip-tazo, and Azithromycin. Blood and respiratory cultures were negative. Pleural fluid studies showed 30,836 WBC with 93% neutrophils and LDH of 2,227. Cytology showed reactive fluid with abundant acute inflammation but no evidence of malignancy. HIV was negative. Patient did well clinically throughout the hospitalization and eventually was discharged home with Linezolid. Pleural fluid later grew rare *Strep gordonii* and *Cryptococcus*. CSF was negative for meningitis. Cryptococcal antigen in the CSF and blood were both negative. Patient is currently being treated with fluconazole with a close outpatient follow-up.

**Discussion:** We have a case of pneumonia with positive pleural cultures of two unusual causes of pneumonia. *Strep gordonii* is bacteria that resides primarily in oral flora in humans but is known to spread outside the oral cavity rarely. *Cryptococcus* is a yeast that usually

causes infection in immunocompromised individuals. Given that patient is at a low risk for aspiration and that she is currently known to be immunocompetent, it is unusual that patient presents with both *Streptococcus* and *Cryptococcus* infections.

## **NOT SO CLASSIC CORONARY CLOT: APLA SYNDROME PRESENTING AS ACUTE CORONARY SYNDROME**

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**Introduction:** Antiphospholipid antibody (APLA) syndrome, diagnosed by clinical and laboratory criteria, is often considered after unusual or recurrent clots. APLA is also frequently suspected in females of reproductive age with underlying autoimmune disease or recurrent miscarriage. The following is an unusual case of an older woman with multiple risk factors for coronary artery disease whose acute coronary syndrome (ACS) etiology was thrombophilia.

**Case:** A 68 year old woman with a past medical history significant for morbid obesity, hypertension, type 2 diabetes mellitus, right middle cerebral artery (MCA) stroke, and remote DVT presented with acute typical chest pain. She was admitted for chest pain evaluation after initial ECG was reassuring and troponin was 0.0. Her repeat troponins at 6 and 12 hours were 5.0 and 25.0 respectively, and left heart catheterization was performed on hospital day two. Angiography showed occlusions both in the distal left anterior descending and left circumflex artery concerning for possible dissection or clot. Hypercoagulable workup ensued. Her lupus anticoagulant and phospholipid IgM were positive while inpatient, and she was discharged on anticoagulation and aspirin. She was then lost to follow up for 7 months, at which time she presented with a new left MCA stroke. Repeat APLA antibody testing was persistently positive (beta-2 glycoprotein, phospholipid, and lupus anticoagulant). She also had developed pancytopenia and nonscarring alopecia in the six-month interim. Immunologic testing for systemic lupus erythematosus (SLE) was positive, and she was diagnosed with SLE and APLA syndrome.

**Discussion:** This case illustrates the unusual etiology of thrombophilia as the cause of a non-ST elevation myocardial infarction (NSTEMI) in a patient with multiple risk factors for coronary disease. Additionally, her clotting disorder was likely the initial manifestation of her

SLE, and she did not meet the clinical criteria (SLICC criteria) until seven months after her acute clotting event. There is a paucity of evidence for the role of immunomodulatory agents in APLA syndrome without SLE, and in the absence of clinical criteria of SLE there was not an indication for serologic SLE testing. Recognition of concomitant SLE and APLA is paramount to early initiation of immunomodulatory agents to control antibody production and decrease cardiovascular risk.

## WHAT LIES BENEATH: A CASE OF DIFFUSE ALVEOLAR HEMORRHAGE SECONDARY TO SYSTEMIC LUPUS ERYTHEMATOSUS

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**Introduction:** Diffuse alveolar hemorrhage (DAH) is a rare and serious complication of systemic lupus erythematosus (SLE). This case describes a female who had DAH and nephritis secondary to newly diagnosed lupus, and her successful response to therapy. While most DAH cases in SLE present around ages 20-40, she presented in her 60s with a significant mortality risk.

**Case:** This patient was admitted for progressive shortness of breath, productive cough, and hemoptysis for 2 days. Past medical history was noted for breast cancer, liver cirrhosis secondary to presumed non-alcoholic fatty liver disease complicated with portal hypertension, asthma, obstructive sleep apnea, and hypertension. Physical examination was remarkable for rales in the right lower lung base that progressed to the left side. Significant labs included a hemoglobin of 6 g/dl from a baseline of 9 g/dl, platelet count 59000/μl, BUN 35 mg/dl and creatinine 3.3 mg/dl from a baseline of ~15 mg/dl and 1.3 mg/dl respectively. Urinalysis showed large blood and proteinuria. CT chest showed bilateral airspace consolidations and ground glass opacities suggestive of diffuse alveolar hemorrhage. Workup was positive for multiple autoimmune markers; leading differential at onset was mixed connective tissue disease vs granulomatosis with polyangiitis. She initially required intubation with mechanical ventilation and produced bloody secretions from endotracheal tube, confirming suspicion for DAH. Kidney biopsy was consistent with stage 3 and 4 lupus nephritis. Her final diagnoses were lupus nephritis and diffuse alveolar hemorrhage secondary to SLE. She received glucocorticoids and plasmapheresis for 5 sessions and started cyclophosphamide. Respiratory status and kidney function gradually improved. Eventually she was discharged with improved imaging and kidney function on 3 month follow up.

**Discussion:** This case depicts an uncommon manifestation and feature of SLE. DAH has been reported to complicate 2-5% of all cases of SLE. Our patient was not previously diagnosed with SLE; her first manifestation was DAH. In one case study from Europe, DAH was the initial manifestation in 3 out of 15 patients secondary to SLE (20%) as compared to 11% in literature series. This study also reported lupus nephritis frequently (14 out of 15 cases) with DAH. Overall mortality rate was 53% in that series and 50% in the literature series. Factors associated with increased mortality were mechanical ventilation, infection and cyclophosphamide therapy for the acute DAH episode. Our patient had all of these factors coupled with DAH, and yet improved to be discharged and seen as an outpatient.

## PSEUDOPROGRESSION OF BREAST CANCER WITH OLAPARIB

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**Introduction:** Second to skin cancer, regardless of race and ethnicity, breast cancer is among the leading cancers diagnosed in women in the United States, with triple negative breast cancer (TNBC) representing approximately 15-20% of all breast cancer cases. TNBC is also known to have a high recurrence rate, with approximately 30% of women experiencing a recurrence within 2.6 years of initial diagnosis. Due to a lack of estrogen, progesterone or HER-2 receptors, TNBC has typically been treated with a combination of surgery, chemotherapy and radiation therapy. This past year, olaparib, a poly (ADP-ribose) polymerase inhibitor was approved for the germline BRAC mutation HER2-negative metastatic breast cancer in patients previously treated with chemotherapy in a neoadjuvant, adjuvant or metastatic setting. As with the initiation of any therapy, risks versus benefits must be outweighed.

**Case:** A 39 year old Hispanic woman with a history of Invasive Ductal Carcinoma of the left breast clinically Staged as IIA triple negative grade 3 breast cancer where therapy with olaparib was almost discontinued due to pseudoprogression of metastatic disease after the initiation of therapy. The patient previously underwent left modified radical mastectomy, was treated with 4 cycles of doxorubicin/cyclophosphamide followed by four cycles of paclitaxel/carboplatin which were discontinued secondary to severe adverse reaction. She subsequently completed 4 months of treatment with capecitabine. She underwent prophylactic right mastectomy a year later, reported negative for malignancy. Recurrence of breast cancer was diagnosed following symptomatic right shoulder pain with CT chest demonstrating a mass 6.5 x 4 cm in the right paracervical area which was biopsy confirmed. She was started on olaparib 300 mg twice daily. Repeat CT chest due to progressively worsening shortness of breath and fevers



demonstrated a large 10 x 10 cm medial pleural based tumor mass with invasion into the pericardium and displacement of the heart to the left. This represented a growth of approximately 4 cm from the previous 6 cm mass over the course of a few weeks. A clinical dilemma arose with concern for pseudoprogression versus progression of the disease in spite of olaparib therapy. With continued therapy, repeat CT chest demonstrated near complete resolution of the large right apical tumor mass, resolution of the right pleural effusion and no new identifiable masses.

**Discussion:** To the best of our knowledge, this is the first reported case of pseudoprogression of metastatic breast cancer with the use of olaparib.

## WHEN TO PERFORM ENDOSCOPY ON CASES OF SUSPECTED MAC

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**Case:** A 43 year old woman with a past medical history of AIDS (CD4 of 5) and non-adherence with HAART presented with a 3 month history of nonbloody diarrhea, abdominal pain, and an 80 pound weight loss. She was cachectic with mild tenderness throughout the abdomen and was noted to have pancytopenia with a profound anemia. Alkaline phosphatase was elevated with normal AST and ALT. Stool culture, O&P, C diff, shiga toxin, and stool cryptosporidium Ag were negative. Stool Acid Fast Stain was positive. Mediastinal, axillary, retroperitoneal, and inguinal lymphadenopathy were noted on CT scan with mild wall thickening of the proximal jejunum and splenomegaly. ID and GI were consulted who recommended initiation of azithromycin, rifabutin, and ethambutol given the high suspicion for disseminated MAC. After 12 days of hospitalization, her diarrhea had not improved, and it was decided to proceed with both an EGD and colonoscopy. EGD demonstrated atrophic appearing mucosa diffusely in the 2nd and 3rd portions of duodenum. Colonoscopy showed moderately severe colitis in the ileocecal valve with the mucosa appearing edematous, erythematous, and friable. The TI had multiple small erythematous, hypervascular appearing lesions with the appearance of angioectasias. A perianal fistula was also noted. The pathology of the duodenal, terminal ileum, IC valve, and random colon biopsies all showed acid-fast bacilli bacteria within the macrophages. Given the endoscopy findings with blood cultures which were previously positive and eventually grew MAC, the diagnosis of disseminated MAC was confirmed. Her diarrhea gradually improved and she was restarted on HAART before discharge.

**Discussion:** In the post-HAART era, the incidence of diarrhea attributed to opportunistic infections has decreased; however, the workup and evaluation for infectious diarrhea continues to be paramount. The American Society for Gastrointestinal Endoscopy recommends

stool testing for pathogens as the first-line evaluation followed by endoscopy when the diarrheal illness is persistent and stool tests fail to reveal a cause in immunocompromised patients. MAC can affect several parts of the gastrointestinal system. In one review of 55 previously reported cases of MAC with GI involvement, endoscopy demonstrated involvement of the duodenum (76%), rectum (24%), ileum (6%), colon (4%), esophagus (4%), jejunum (2%), and stomach (2%). MAC colonization of the gastrointestinal tract is important because it increases the risk of disseminated MAC with the risk of MAC bacteremia approaching 60% within 1 year.

Our approach to this patient was to perform endoscopy only when her symptoms persisted despite treatment. This case was interesting in that duodenum, ileum, and colon were all affected. Lastly, this case was an excellent example of several classic MAC findings including the findings of profound anemia, elevated alkaline phosphatase, splenomegaly, mesenteric and abdominal lymphadenopathy.

## RARE CAUSE OF STEMI IN PROSTHETIC VALVE ENDOCARDITIS

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**Introduction:** Prosthetic valve endocarditis (PVE) is a condition with high risk of morbidity due to associated complications such as sepsis, perivalvular abscess, and peripheral embolism. We present here a case of left main coronary artery embolism due to PVE.

**Case:** A 35 year-old man with history of bioprosthetic aortic valve 8 months ago secondary to infective endocarditis presented with 1 day history of fever and malaise. Vitals on admission with tachycardia 111 beats/min, temp 101.8°F and 3/6 systolic murmur at aortic area with janeway lesions present on physical exam. Labs significant for lactic acid 2.8, troponin of 4.5 mg/dL and WBC 16. ECG with sinus tachycardia, premature atrial complexes, and right bundle branch block. Patient initiated on empiric antibiotics with blood cultures positive for methicillin sensitive staph aureus (MSSA). Transesophageal echo revealed vegetation on undersurface of bioprosthetic aortic valve with edema versus annular root abscess. Cardiothoracic surgery with eventual plans for surgical repair, however on the following day, ECG revealed ST elevations in II, III, aVF, V1-V3 and troponin of 9.7ng/mL. Patient taken emergently for percutaneous coronary intervention (PCI) where the LAD had proximal embolic occlusion treated with drug-eluting stent and ejection fraction 20% with placement of intra-aortic balloon pump (IABP). A presumptive diagnosis of MSSA PVE with embolic myocardial infarction from vegetation was established. Patient became a poor surgical candidate with significant multisystem organ failure and soon decompensated secondary to his overall critical illness.

**Discussion:** Staphylococcus aureus is the leading culprit in PVE and requires early surgical intervention when associated with aortic root abscess which can result in conduction abnormalities and embolic phenomenon presenting as a STEMI. PCI and IABP provided temporary stability however, revision of aortic valve

replacement was indicated as early as possible. Embolization from aortic valve vegetation to the LAD is an extremely rare phenomenon; most emboli to the LAD arise from mitral valve vegetation. Early surgical intervention is vital in PVE associated with aortic root abscess as embolic events can become fatal complications.

## MULTIPLE MYELOMA MASQUERADING AS AN AKI

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**Case:** A 70 year-old woman with normocytic anemia was transferred from an outside hospital with worsening renal function in the setting of an acute diarrheal illness despite supportive care with intravenous fluids. On admission, the patient complained of fatigue and decreased appetite in addition to her GI symptoms. Physical exam was noncontributory. Her creatinine was found to be 9.4, compared to 1.1 four months prior. BUN was 79 and bicarbonate was 18. A renal ultrasound revealed no signs of obstruction or hydronephrosis. Urine protein was found to be 1.4 g/day. Serum and urine electrophoresis immunofixation showed an IgA kappa paraprotein band. Her kappa/lambda light chain ratio was elevated to 313. A bone marrow biopsy was performed, which revealed plasma cell myeloma extensively involving a hypercellular bone marrow. The patient was diagnosed with multiple myeloma (MM). She underwent PLEX to clear the free light chains (LCs). Her renal function improved, and arrangements were made to begin outpatient chemotherapy with bortezomib, cyclophosphamide, and dexamethasone.

**Discussion:** Acute kidney injury (AKI) is a problem frequently encountered by all hospitalists. Hospitalists are advised to consider myeloma cast nephropathy in the differential for AKI as up to 50% of MM patients will have an elevated creatinine level at diagnosis. A diagnosis of MM can be made when there is a myeloma-defining event (MDE) plus either marrow involvement of  $\geq 10\%$  clonal plasma cells or biopsy-proven plasmacytoma. MDEs include established CRAB criteria (hypercalcemia, renal failure, anemia, and bone lesions) and certain biomarkers, such as a kappa/lambda ratio  $\geq 100$  as seen in this case. MM is among the cancers with the highest rates of AKI, which can be due to damage to glomeruli or tubules from paraprotein casts, volume depletion, hypercalcemia, or tumor lysis syndrome. LC cast nephropathy represents the most common renal manifestation of

myeloma. Management of myeloma-related AKI includes holding nephrotoxic agents, providing IV hydration, correcting electrolyte and pH abnormalities, and treating the underlying MM with bortezomib-based therapy and corticosteroids. Plasmapheresis may be considered for free LC removal, which has been shown to expedite renal recovery. Hospitalists should consider LC cast nephropathy as a possible cause for AKI that does not improve with supportive care. The importance of a timely and multifaceted approach lies in the prevention of progressive renal disease and other complications.

## SEVELAMER CRYSTALS: WREAKING HAVOC IN THE COLON

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Sevelamer is a cationic polymer which works to bind intestinal phosphate, thereby lowering serum phosphate levels in patients with chronic kidney disease or end stage renal disease (ESRD). Hyperphosphatemia is a well-known complication of advanced kidney disease, necessitating dietary restriction of phosphorus and administration of binders to control phosphorous levels. Not only is hyperphosphatemia an independent risk factor for cardiovascular disease, but mortality rates are increased with prolonged hyperphosphatemia compared to those with well-controlled phosphate levels. This makes phosphate binders an integral part of evidence-based practice in ESRD patients. Here we present a case of sevelamer crystal-induced cecal inflammation and ulceration causing superimposed abscess formation. Initially a concern for malignancy, biopsies were taken during a colonoscopy following an incidental finding of cecal mass on Computed Tomography (CT) scan of the abdomen and pelvis. This scan was performed to rule out covert source of infection as this patient had persistent gram-positive bacteremia. An important element of this case was the co-morbid condition of severe chronic constipation. We also review other cases described of sevelamer crystal involvement in colon mucosal inflammation. Hematochezia and stricture formation have been described in these other cases, however this is the first documented case of abscess or mass formation.

## A CASE OF A SPLENIC ABSCESS THAT LIKELY SEEDED FROM A GASTROCNEMIUS ABSCESS

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**Introduction:** Splenic abscesses are rare, occurring at a rate of 0.14-0.7%. Risks include immunosuppression, malignancy, trauma, diabetes and hematogenous spread from infective endocarditis. Typical presentation consists of fever and abdominal pain. This is a patient that had a rather unusual presentation of an unusual condition.

**Case:** A 48 year-old woman presented with one month of left leg swelling and pain. After two negative DVT workups in the outpatient setting, a non-contrast CT showed a large lobulated splenic mass/cyst and she was sent to the hospital for further workup.

Upon exam, leg was swollen, erythematous, and tender. She was found to be septic and initiated on Vancomycin and Zosyn. She underwent abdominal MRI, upper endoscopy and endoscopic ultrasound, which were non-revealing. Antibiotics were stopped, at which point her leg became more erythematous and she had difficulty walking. This prompted CT of the leg which revealed an abscess throughout most of the gastrocnemius muscle. Vancomycin was restarted and patient underwent surgical drainage of the leg with subsequent washouts prior to closing. CT guided aspiration of splenic lesion revealed purulent material consistent with abscess. Due to concern of continued hematogenous seeding, she underwent robotic splenectomy. Intraoperative cultures from both sites demonstrated MRSA, despite persistently negative blood cultures. She was initially discharged on Linezolid but returned for fever so she was restarted on Vancomycin to complete a 6 week course for suspected transient bacteremia despite negative cultures.

**Discussion:** This was a rare case of a splenic abscess as the source had likely seeded from the abscess in her gastrocnemius. Initially, the thought was that the patient had cellulitis in her leg,

lesion was thought to be associated with the working diagnosis of possible lymphoma. It is likely she may have had pyomyositis of the gastrocnemius resulting in transient bacteremia with hematogenous seeding to the spleen. Her recent diagnosis of diabetes mellitus, with a hemoglobin A1C of 11 is likely her risk factor. It is unusual that she did not have any fever, abdominal symptoms or culture positive bacteremia given the appearance of her abscess. While antibiotics and percutaneous drainage have been successful in other cases, her abscess was loculated and extensive which was why the decision was made for total splenectomy. She did well post operatively and after completion of antibiotics.

### **A CASE OF ORF VIRUS (HUMAN ECTHYMA CONTAGIOSUM) AFTER EID AL-ADHA RELIGIOUS PRACTICES**

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Orf virus, also known as ecthyma contagiosum and a member of the *Parapoxvirus* genus, is a contagious zoonotic infection acquired through contact with infected goats or sheep in conjunction with skin trauma. Orf virus in humans usually manifests as a pustular dermatitis that evolves through six clinical stages, each lasting about one week and ending in resolution. We present the case of a 45-year-old Moroccan-born man who developed multiple painful erythematous-violaceous ulcers of the hands after incurring a knife injury while butchering a goat to celebrate the Muslim feast Eid al-Adha. The diagnosis of Orf was established based on epidemiologic risk factors, histopathology, and classic skin lesions.

### **WHEN TWO DRUGS ARE BETTER THAN DOUBLE OF ONE: A CASE OF PHENYTOIN TOXICITY.**

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**Introduction:** Phenytoin has a relatively broad therapeutic range, so toxicity is not seen often. Due to the broad therapeutic range and the infrequency of toxicity, not much is known about the presentation and management of phenytoin toxicity. Below is a presentation of a patient who presented with acute phenytoin toxicity.

**Case:** 31 year old man with a past medical history of a seizure disorder and vertigo secondary to a traumatic brain injury from a motor vehicle accident presented to the Emergency Department with the primary complaint of dizziness. He had ataxic gait, horizontal nystagmus, abdominal pain, nausea and vomiting. His home medications included phenytoin, zonisamide, cyanocobalamin, Depakote, and ergocalciferol. On admission, it was discovered that the patient had run out of his zonisamide, so he had been taking double doses (300mg BID) of the phenytoin for the past couple of days. As a result, his blood phenytoin levels were supra-therapeutic at a 55.8 µg/mL (normal therapeutic range is 10-20 µg/mL). The patient's vital signs were within normal limits. EKG showed sinus bradycardia but normal intervals and QT interval. His potassium was slightly low at 3.4 mmol/L, and his glucose was slightly elevated at 103 mg/dL. His liver enzymes and renal function were within normal limits. CT scan of the head on admission showed no acute infarct, intracranial hemorrhage, or mass lesion.

**Discussion:** Phenytoin is known to have a half-life of at least 48 hours, so it could be expected that it would take time for the Phenytoin level to drop to a therapeutic range of 30 or below. In this case, the values dropped very gradually, and even increased on the second day. On researching the pharmacokinetics of phenytoin, it was discovered that after oral ingestion of phenytoin, the drug continues to be absorbed in the GI tract for up to 60 hours. Additionally phenytoin circulates in the blood with 90% bound

to albumin, and it has a very variable-dose dependent half-life. At therapeutic doses, the half-life can range from 8-60 hours, with an average of 20-30 hours, but in overdose situations, the half-life can increase to 24-230 hours. This dose dependent change helps to explain the delayed decrease in phenytoin levels seen in this patient. Phenytoin is metabolized in the liver by parahydroxylation by the CYP450 enzyme. This system becomes saturated at higher doses and turns into zero order kinetics, so while this patient was not on another drug that utilizes the P450 enzyme, this could be a factor in many other patients. Causes of extreme build-ups of phenytoin are hypoalbuminemia, hepatic dysfunction, hereditary insufficient parahydroxylation, and inhibition of metabolism by other drugs. There are many drugs that have been known to displace phenytoin from protein binding sites in the plasma. Of particular note is heparin. This is significant in the hospital setting due to the high numbers of patients in the hospital on heparin for DVT prophylaxis, including our patient. It took four days for the phenytoin levels to drop back to therapeutic values, which can be explained by the high initial phenytoin levels, the use of heparin for DVT prophylaxis, and the long absorption time from the gut. On discharge, the patient was switched to Lacosamide for seizure prophylaxis rather than phenytoin to prevent future adverse reactions.