Dear Colleagues,

On behalf of the OU School of Community Medicine, I would like to welcome you to the 8th Annual Clinical Vignette Symposium. CVS is an opportunity to present your case reports in a conference setting and gives everyone a chance to share stories of great cases you have seen.

Case studies are a crucial part of exploratory scholarly activity and disseminate new knowledge, allowing for collaborative learning. We are so pleased that you have chosen to take part in CVS this year. We hope that you enjoy all of the cases and get a chance to meet new colleagues.

I want to thank all of our staff and faculty who help make this happen. I particularly would like thank Dr. Kevin Taubman from the Surgery Department, for his support of CVS since its inception and his continuing financial gifts that have allowed us to reward our best cases with monetary prizes.

Have a great CVS 2019!

Sincerely,

Martina Jelley, MD, MSPH, FACP
Professor and Vice Chair for Research, Department of Internal Medicine
Julian Rothbaum Chair in Community Health Research
Assistant Dean for Clinical Research
University of Oklahoma School of Community Medicine
ACKNOWLEDGEMENTS

ORDSA would like to express our sincerest appreciation to Dr. Kevin Taubman for his ongoing support and contributions to this event. ORDSA would also like to thank all faculty and staff who contributed their time and energy to organizing this event.

Clinical Vignette Symposium 2019

Committee
Martina Jelley, MD, MSPH, FACP
Julian Rothbaum Chair for Community Research
Heather McIntosh, MS, CRA
ORDSA Manager
Krista Kezbers, PhD
ORDSA Assistant Staff Director
Research Development Specialist
Sarah Beth Bell, PhD
ORDSA Research Development Specialist
Danielle Fousel, LSSGB
ORDSA Administrator

Reviewers
Department of Emergency Medicine
Joshua Gentges, DO

Department of Internal Medicine
Audrey Corbett, MD
Martina Jelley, MD, MSPH
Bernadette Miller, MD

Department of Medical Informatics
Blake Lesselroth, MD, MBI, FACP

Department of Pediatrics
Michael Baxter, DO
Michelle Condren, PharmD, AE-C, CDE

Department of Psychiatry
Jerrod Spring, MD
Bryan Touchet, MD
Ashley Walker, MD

Department of Surgery
Peter Nelson, MD
# Clinical Vignette Symposium 2019

## Judges

### Department of Emergency Medicine
- Emily Fisher, MD
- Joshua Gentges, DO

### Department of Family Medicine
- Viviane Sachs, MD
- Jennifer Weakley, MD
- Frances Wen, PhD

### Department of Internal Medicine
- Krishna Baradhi, MD
- Bernadette Miller, MD
- Michael Weisz, MD

### Department of Medical Informatics
- Blake Lesselroth, MD

### Department of Medicine / Pediatrics
- William Butron, MD

### Department of Obstetrics & Gynecology
- John Ervin, MD
- Karen Gold, MD
- Michael Gold, MD
- Monica Henning, MD
- Jameca Price, MD
- Monica Tschirhart, MD

### Department of Pediatrics
- Laura Chalmers, MD
- Taylor Couch, MD
- Michelle Escala, MD
- Carmen Gent, DO
- David Jelley, MD
- Kimberly Martin, DO
- Sarah Passmore, DO
- Susan Studebaker, MD

### Department of Psychiatry
- Jana Bingman, MD
- Kristy Griffith, MD
- Tessa Manning, MD
- Sarah McClanahan, DO
- Jerrod Spring, MD
- Bryan Touchet, MD
- Ashley Walker, MD

### Department of Surgery
- Kelly Kempe, MD
- Hyein Kim, MD
- Kevin Taubman, MD
Table of Contents

Oral Presentations

Abstract #9: GRADENIGO’S SYNDROME ................................................................. 11
Abstract #75: PERCUTANEOUS TRANSCAVAL EMBOLIZATION IN PERSISTENT TYPE II
ENDOLEAK POST EVAR .................................................................................. 12

Poster Presentations

Emergency Medicine ....................................................................................... 14
Abstract #13: STATUS EPILEPTICUS RESULTING FROM VENOUS SINUS THROMBOSIS .......... 15
Abstract #23: TREATMENT OF METFORMIN ASSOCIATED LACTIC ACIDOSIS ...................... 16
Abstract #30: CEREBRAL ISCHEMIA DUE TO LARGE VESSEL OCCLUSION: A CASE REPORT .... 17
Abstract #52: NON-SUSTAINED POLYMORPHIC VENTRICULAR TACHYCARDIA AFTER
MODIFIED VAGAL MANEUVER FOR SVT ................................................................ 18
Abstract #53: BEDSIDE ULTRASOUND DIAGNOSIS OF RUPTURED ABDOMINAL AORTIC
ANEURYSM PRESENTING AS GENERALIZED SEIZURE ............................................. 19
Abstract #54: TREATMENT AND STABILIZATION OF THYROTOXICOSIS IN THE POSTPARTUM
SETTING ........................................................................................................... 20
Abstract #56: UNUSUAL CASE OF MAGNET INGESTION ............................................ 21
Abstract #94: SYSTEMIC LOXOSCELISM: A RARE COMPLICATION OF BROWN RECLUSE
ENVENOMATION .............................................................................................. 22

Family Medicine ............................................................................................... 23
Abstract #44: SUSPECTED SYNDROME OF INAPPROPRIATE ANTIDIURETIC HORMONE WITH
SMALL CELL CARCINOMA ............................................................................ 24
Abstract #60: NEUROSYPHILIS IN A PATIENT WITH RECENT DIAGNOSIS OF HIV .............. 25
Abstract #64: OSTEOMYELITIS ASSOCIATED WITH SURGICAL TOENAIL AVULSION ............ 26

Internal Medicine .............................................................................................. 27
Abstract #5: INVASIVE PRIMARY MUCORMYCOSIS: RENAL RHIZOPUS .............................. 28
Abstract #18: JUMPING TO CONCLUSIONS MAY MISS THE RIPE DIAGNOSIS: ACUTE
PERICARDIAL TAMponade SECONDARY TO TUBERCULOSIS IN AN ESRD PATIENT ........ 29
Abstract #20: SEVERE ACUTE HEPATITIS IMPROVED WITH CYCLOSPORINE IN DRESS SYNDROME .................................................................................................................. 30

Abstract #21: SUCCESSFUL REMISSION OF SEVERE PALMOPLANTAR PUSTULOSIS .......... 31

Abstract #32: APPENDICEAL CARCINOMA: A FEARED IMITATOR OF ACUTE APPENDICITIS.... 32

Abstract #33: HERPES SIMPLEX ENCEPHALITIS: A CASE FOR EARLY CLINICAL SUSPICION ...... 33

Abstract #36: A RARE CASE OF LUPUS NEPHRITIS WITH CONCURRENT CHECKPOINT INHIBITOR USE .................................................................................................................. 34

Abstract #45: PANUVEITIS AS INITIAL PRESENTATION OF SYPHILIS IN AN ACTIVE INTRAVENOUS DRUG USER.................................................................................................. 35

Abstract #47: A MYSTERIOUS CASE OF DRUG INDUCED LUPUS NEPHRITIS ...................... 36

Abstract #49: ARTHRITIS AND PARASPINAL MYALGIAS: A CASE OF BROWN HEROIN SYNDROME .................................................................................................................. 37

Abstract #51: UNEXPLAINED REFRACTORY LACTIC ACIDOSIS ........................................... 38

Abstract #57: IMMUNOCOMPROMISED: AN UNDERLYING RISK FACTOR FOR DISSEMINATED GONORRHEA ................................................................................................. 39

Abstract #58: LOOKS CAN BE DECEIVING: POSTURAL ORTHOSTATIC TACHYCARDIA SYNDROME, THE INVISIBLE DISEASE ................................................................. 40

Abstract #61: A RARE CAUSE OF ACUTE CORONARY SYNDROME: CORONARY VASOSPASM IN REFRACTORY CARCINOID SYNDROME .......................................................... 41

Abstract #70: HEPATITIS C ASSOCIATED MEMBRANOUS NEPHROPATHY: A POSSIBLE KEY TO UNLOCKING NEPHROTIC SYNDROME? .................................................................... 42

Abstract #73: FANCONI’S SYNDROME & HYPMAGNESEMIA: AN OVERLOOKED ASSOCIATION OR DIAGNOSTIC ENTITY? .................................................................................. 43

Abstract #78: MELANOMA, MYASTHENIA GRAVIS AND A MONOClonAL ANTIBODY .......... 44

Abstract #80: A SILENT KILLER: A POST-MYOCARDIAL INFARCTION COMPLICATION .......... 45

Abstract #84: DAPTOMYCIN INDUCED ACUTE INTERSTITIAL NEPHRITIS (AIN): A NEW MEMBER TO THE AIN MEDICATION FAMILY? ................................................................. 46

Abstract #85: ANTIFREEZE IN THE EMERGENCY DEPARTMENT – RAPID MANAGEMENT SAVES KIDNEYS................................................................................................................. 47

Abstract #88: EXTREME MEDICAL COMPLICATIONS OF STRICTER OPIOID PRESCRIPTION LAWS .................................................................................................................. 48

Abstract #96: A PEDIATRIC ILLNESS IN THE ADULT : A CASE OF MINIMAL CHANGE DISEASE . 49
Abstract #77: CHOKING ON A BONE: WHEN METAPLASIA GOES BAD

Abstract #27: POST-ABORTION NECROTIC CERVICAL MASS

Abstract #48: SIMULTANEOUS CYSTOSCOPY AND LAPAROSCOPY TO DELINEATE BLADDER BORDERS DURING HYSTERECTOMY

Abstract #68: ANEMIA, ANTI-EPILEPTICS, AND AUTHORITATIVE BIAS

Abstract #4: ADRENOCORTICAL CARCINOMA: AN UNCOMMON PEDIATRIC DIAGNOSIS WITH A COMMON PEDIATRIC CHIEF COMPLAINT

Abstract #7: INTRA-ARTERIAL THERAPY FOR CEREBRAL VASOSPASM IN A PEDIATRIC PATIENT WITH STREPTOCOCCAL MENINGITIS

Abstract #8: SPASMUS NUTANS: A CASE REPORT

Abstract #10: ZELLEWER SYNDROME: CASE REPORT AND A CASE FOR PEDIATRIC HOSPICE

Abstract #15: A CASE OF ULCEROGLANDULAR TULAREMIA IN THE PEDIATRIC POPULATION

Abstract #16: SPOROTRICHOSIS AS AN UNCOMMON MYCOTIC INFECTION IN CHILDHOOD

Abstract #17: THE USE OF 16S rRNA TO AID DIAGNOSIS IN CULTURE NEGATIVE INTRA-ABDOMINAL ABSCESS

Abstract #22: CONGENITAL TEMPORAL TRANSCUTANEOUS SINUS TRACT LEADING TO AN EPIDURAL BRAIN ABSCESS

Abstract #26: UNCOMMON PEDIATRIC PRESENTATION OF DE NOVO FAMILIAL ADENOMATOUS POLYPOSIS

Abstract #46: ECMO THERAPY FOLLOWING CARDIAC TAMPOANDE IN HUS: A CASE REPORT

Abstract #59: MULTIPLE HEALING FRACTURES SECONDARY TO NUTRITIONAL PHOSPHATE DEFICIENCY

Abstract #90: SPINAL EPIDURAL ABSCESS AFTER LUMBAR PUNCTURE IN A PEDIATRIC PATIENT

Abstract #93: PANHYPOPITUITARISM AND BILATERAL CORNEAL OPACIFICATIONS IN A MALE INFANT: AN UNUSUAL DICHOTOMY
Psychiatry

Abstract #3: RISING LEVELS OF GABAPENTIN MISUSE AND ABUSE: A CASE REPORT .......... 71
Abstract #28: PROLONGED PSYCHOSIS AFTER A SINGLE STEROID SHOT: A CASE REPORT ..... 72
Abstract #29: NEUROPSYCHIATRIC CHANGES IN A PATIENT WITH FRONTAL LOBE STROKE- A CASE REPORT .......................................................................................................................................................... 73
Abstract #35: MAJOR NEUROCOGNITIVE DISORDER IN A PATIENT WITH NEOBROQUILIS: A CASE REPORT .......................................................................................................................................................... 74
Abstract #40: LATE ONSET SCHIZOPHRENIA: A CASE REPORT .......................................................................................................................................................... 75

Surgery

Abstract #38: PNEUMONECTOMY FOR PULMONARY HISTOPLASMOSIS IN PREGNANCY ...... 77
Abstract #43: INTRAMUSCULAR MYXOMA OF THE LOWER EXTREMITY: DIAGNOSIS AND TREATMENT OF RARE PATHOLOGY .......................................................................................................................................................... 78
Abstract #50: SUBHEPATIC ABSCES DUE TO RETAINED GALLSTONES AFTER LAPAROSCOPIC CHOLECYSTECTOMY .......................................................................................................................................................... 79
Abstract #62: METASTATIC BREAST CANCER TO A PERICOLIC LYMPH NODE..................... 80
Abstract #63: FENESTRATED ENDOVASCULAR GRAFT REPAIR OF JUXTARENAL ABDOMINAL AORTIC ANEURYSM .......................................................................................................................................................... 81
Abstract #66: SNORKELED IN THE (S)EVAR ...................................................................................... 82
Abstract #69: SYMPTOMATIC PANCREATIC SEROUS CYSTADENOMA ........................................ 83
Abstract #71: ENDOVASCULAR REPAIR OF COMPLEX TYPE III ENDOLEAK ......................... 84
Abstract #72: PRIMARY PANCREATIC FOLLICULAR LYMPHOMA ................................................ 85
Abstract #74: ENDOVASCULAR ARTERIAL CONTROL DURING A PARTIAL NEPHRECTOMY IN A TRANSPLANTED KIDNEY .......................................................................................................................................................... 86
Abstract #76: TRANS-CAROTID STENTING WITH DYNAMIC FLOW REVERSAL: AN ALTERNATIVE TO CAROTID ENDARTERECTOMY .......................................................................................................................................................... 87
Abstract #79: ELLIPSYS ARTERIOVENOUS FISTULA CREATION SYSTEM FOR A HEMODIALYSIS PATIENT .......................................................................................................................................................... 88
Abstract #82: RECURRENT ACUTE PANCREATITIS SECONDARY TO PANCREATICOJEJUNOSTOMY ANASTOMOTIC STRICUTURE AFTER PANCREATODUODENECTOMY .......................................................................................................................................................... 89
Abstract #86: AN UNUSUAL PRESENTATION OF COMMON FEMORAL ARTERY ANEURYSM AND REPAIR VIA HYBRID APPROACH .......................................................................................................................................................... 90
Oral Presentations
Abstract #9: GRADENIGO'S SYNDROME
Dr. Brian Milman - OU Department of Emergency Medicine
Dr. Jeffrey Goodloe - OU Department of Emergency Medicine

INTRODUCTION: It has been almost a century since Alexander Fleming discovered penicillin. Antibiotics have become so ubiquitous and so essential to modern medical practice that it is difficult to imagine a pre-antibiotic era. There are some conditions that have become incredibly rare with routinely prescribed antibiotics, but as emergency physicians, they are still necessary to know as they may lead to morbidity and death.

CASE REPORT: A 15 year old boy presented to the emergency department for evaluation of left facial pain, left eye pain, and left ear pain. Ear pain has been present for several weeks. He was evaluated in the ED 8 days prior to this visit and diagnosed with suppurative otitis media of the left ear. He was discharged with a prescription for amoxicillin, but was unable to fill the medication until 3 days prior to this visit. He had no known medical problems.

The patient was afebrile and non-tachycardic. On exam he had an abducens nerve palsy of the left eye. CT imaging was performed of the head and showed advanced left mastoid sinus disease and prominent left otitis media with no other acute findings. MRI of the brain was performed and showed left mastoid disease with petrous apicitis. Pt was started on IV antibiotics and admitted to the pediatric service for further care.

DISCUSSION: Gradenigo syndrome is defined as the triad of suppurative otitis media, pain in the distribution of the trigeminal nerve, and an abducens nerve palsy. Gradenigo syndrome has become very rare with current antibiotic prescribing patterns. Described above is a case of untreated otitis media that progressed to mastoiditis and petrous apicitis. The trigeminal ganglion and abducens nerve lie adjacent to the petrous apex. Compression of these structures in Dorello’s canal leads to the classic triad. Although Gradenigo’s syndrome has become rare, it is a syndrome that the ED provider should be able to recognize. Sequelae of undiagnosed and untreated Gradenigo's Syndrome include meningitis, intracranial abscess, and parapharyngeal abscess. Prompt recognition and treatment may prevent significant mortality and even death.

CONCLUSION: Described here is an interesting case of a rare syndrome, Gradenigo's syndrome that resulted from a patient’s inability to fill a prescription for antibiotics. Identification of a cranial nerve palsy in the ED prompted further workup leading to appropriate treatment and disposition.
Abstract #75: PERCUTANEOUS TRANSCAVAL EMBOLIZATION IN PERSISTENT TYPE II ENDOLEAK POST EVAR

Dr. Rosemarie Zanabria - University of Oklahoma-Tulsa, School of Community Medicine, Department of Surgery
Dr. Ranan Mendelsberg - University of Oklahoma-Tulsa, School of Community Medicine, Department of Surgery
Dr. Vernon Horst - Department of Surgery, University of Oklahoma-Tulsa
Dr. Kelly Kempe - Department of Surgery, University of Oklahoma-Tulsa
Dr. Hyein Kim - Department of Surgery, University of Oklahoma-Tulsa
Dr. Peter Nelson - The University of Oklahoma - Tulsa
Dr. Kevin Taubman - The University of Oklahoma College of Medicine

INTRODUCTION: Following the endovascular aneurysm repair (EVAR) of an abdominal aortic aneurysm (AAA), persistent flow within aneurysm sac represents a complication known as an endoleak. Indications and options for treatment of an endoleak vary based upon the subtype and predicted risk of aneurysm rupture. The following case describes an innovative technique for the treatment of a persistent type II endoleak after prior failed therapies.

CASE REPORT: A 72-year-old male with history of prior EVAR of a AAA presented with a large, type II endoleak and progressive aneurysm sac expansion up to 6.3cm. The patient had undergone multiple, prior failed treatments including percutaneous trans-arterial embolization; as well as, CT-guided trans-lumbar aortic embolization. After discussion of open versus endovascular options, a novel technique of transcaval percutaneous aortic access was employed for the attempted obliteration of flow into the AAA sac and feeding vessels. Under fluoroscopic and intravascular ultrasound guidance, an excellent angiographic result was achieved, and the patient discharged the following day in stable condition. At one month post-procedure, CT angiography demonstrated no further endoleak and an aneurysm sac diameter reduction to 6.1cm.

DISCUSSION: In a classification of post-EVAR complications, the type II endoleak is the most common subtype (25%) characterized by retrograde flow via branch vessels of the aneurysm sac (E.g. lumbar, Inferior mesenteric, accessory renal, gonadal and hypogastric arteries). Criteria for intervention are related to risk of rupture, but include persistent (>6months) flow and/or increasing in aneurysm sac size. Various therapeutic options may include transarterial, translumbar, perigraft approach and open surgical ligation. The transcaval approach is a more recent innovative option available in some cases. Following percutaneous ilio-femoral venous access, a directional sheath and Chiba needle are used under fluoroscopy and angiography to traverse the IVC wall into the AAA sac. Next, via wire guidance, a selective-catheter is positioned into the aneurysm with embolization of the sac and feeding vessels. Various embolization coils and/or other embolic agents (E.g. glue) may be utilized with safety and efficacy. Technique benefits may include larger access site (femoral vein) and decreased periaortic wall dissection in the case of failed aneurysm sac cannulation. Additional resources such as intravascular ultrasound (IVUS) may be enhance technical success by guiding endpoints; as well as, decreasing complications related to non-target embolization and unintended graft/vascular injury.

CONCLUSION: A percutaneous transcaval embolization technique is an emerging safe and viable option for the treatment of selective persistent type II endoleaks following EVAR.
Poster Presentations
Emergency Medicine
Abstract #13: STATUS EPILEPTICUS RESULTING FROM VENOUS SINUS THROMBOSIS
Dr. Greg Melish - OU Department of Emergency Medicine
Dr. Joshua Gentges - OU Department of Emergency Medicine

INTRODUCTION: Seizure at presentation occurs in 39% of patients with a venous sinus thrombosis. Risk factors of venous sinus thrombosis include prothrombotic conditions, oral contraceptives, pregnancy, malignancy infection, and head injury. The most common modalities of diagnosis of a venous sinus thrombosis are CT venography and MR venography. Symptoms range from headache to seizures, decreased mental status, and focal neurological deficits.

CASE REPORT: A 51-year-old female presented to the emergency department with chief complaint of seizure and altered mental status. Her family reports she was complaining of a headache for 3 days, then had a witnessed seizure just prior to arrival. She had no history of seizures. On arrival to the emergency department, she began to have another seizure while talking to the nurse. She was given 2mg Ativan IV with resolution of her tonic-clonic movements. She then began to have repetitive eye movements without tonic-clonic movements, and was given another 2mg of Ativan IV. She was intubated for airway protection due to her somnolence. CT head without contrast showed no acute abnormality. Labs were all largely unremarkable including toxicology screen. CTA head and neck was then performed to rule out other intracranial pathology. There was noted to be lack of enhancement of the superior sagittal sinus which was read as artifact versus a superior sagittal sinus thrombosis. Emergent neurologic consult was obtained and an emergent MRV was performed. Superior sagittal sinus thrombosis was confirmed and she was started on a heparin infusion. It was later discovered that she was taking estrogen oral contraceptive pills, which was her only risk factor for the venous sinus thrombosis. She had full neurologic recovery during her hospital stay and was discharged on warfarin.

CONCLUSION: Venous sinus thrombosis must be considered as a cause of status epilepticus in a patient with prothrombotic risk factors. CT angiography is unlikely to diagnose venous sinus thrombosis as there is approximately a 10 second difference in contrast timing between an angiogram and venogram. Therefore a CT venogram or MR venogram should be obtained if venous sinus thrombosis is suspected. Prompt diagnosis is important; these patients are at high risk for cerebral edema, infarction, hemorrhage, and death.
Abstract #23: TREATMENT OF METFORMIN ASSOCIATED LACTIC ACIDOSIS

Dr. Matt Millington - OU Department of Emergency Medicine
Dr. William Gray - OU Department of Emergency Medicine
Dr. Joshua Gentges - OU Department of Emergency Medicine

INTRODUCTION: Metformin is widely used for management of patients with type 2 diabetics. While the side effect profile is generally mild, the pharmacologic properties of the medication can predispose patients to toxic drug levels with even therapeutic dosages in the setting of renal failure.

CASE REPORT: An 83 year-old African American female with past history of diabetes was brought into the emergency department with decreased mental status. Ambulance service reported that the patient had a blood sugar of 43 on their arrival and the patient received dextrose without improvement in mental status. On arrival, patient was hypothermic with core temperature of 32.3C, initial blood pressure of 163/52, and oriented only to self. Family reported that the patient was found on the ground at home next to an empty container of metformin.

The patient was started on IV fluids with active rewarming in the department. Initial labs were significant for profound lactic acidosis with a lactate of 15 and pH of 6.67, WBC count of 16,000, creatinine of 2.3, and a likely UTI. No history of kidney disease. The patient was started on broad spectrum antibiotics for urosepsis with acute kidney injury. A CT abdomen and pelvis was negative. Blood pressure fell with rewarming and a repeat lactic acid in 3 hours was 16. Patient was started on sodium bicarbonate drip and dialysis catheter was placed for emergent dialysis.

DISCUSSION: Metformin overdose is typically well tolerated in adults with single ingestions of 5g or less. In patients with normal kidney function, severe toxicity tends to develop with ingestions of 25g or more. Metformin relies entirely on renal excretion. In patients with acute kidney failure circulating levels of metformin can reach toxic levels even with normal dosing. Clinical signs of metformin toxicity include mental status changes, hypothermia, hypotension, and severe lactic acidosis. Lactic acidosis may be a result of inhibition of gluconeogenesis mitochondrial respiration. Treatment is supportive. Hypoglycemia can be managed with dextrose, while severe acidosis can be managed with sodium bicarbonate or ultimately hemodialysis.

CONCLUSION: Metformin overdose should be suspected in patients with profound lactic acidosis, especially in the setting of renal impairment. In this case, the patient was admitted to the ICU for emergent dialysis. She was dialyzed multiple times over her hospitalization with gradual decrease in lactic acid levels and improvement in mental status. She eventually returned to her baseline and was discharged to a skilled nursing facility.
Abstract #30: CEREBRAL ISCHEMIA DUE TO LARGE VESSEL OCCLUSION: A CASE REPORT
Dr. Charles Chen - OU Department of Emergency Medicine
Dr. Boyd Burns - OU Department of Emergency Medicine
Dr. Joshua Gentges - OU Department of Emergency Medicine

INTRODUCTION: Ischemic strokes constitute approximately 80 percent of strokes, which are the leading cause of long-term disability and the third cause of the death in the United States each year. Timely restoration of cerebral blood flow is the most effective management of ischemic strokes. For eligible patients, mechanical thrombectomy is the gold standard reperfusion modality. Recognizing patients that meet criteria for mechanical thrombectomy is therefore essential in managing patients presenting with acute cerebral infarctions.

CASE REPORT: A 62-year-old female with past medical history of carcinoid tumor, diabetes, and hypertension presented to the Emergency Department (ED) via ambulance for evaluation of sudden onset left-sided weakness. Last known normal was 3 hours and 15 minutes prior to ED arrival, when the patient was AAOx4 and interacting normally. Upon initial evaluation in the ED, the patient was mute, but squeezing her right upper extremity upon command. She had 0/5 motor strength of the left upper extremity, and 2/5 strength of bilateral lower extremities. She also displayed a right sided gaze deviation and a mild facial droop. Stroke alert was initiated. CT Head was unremarkable. However, CT Perfusion demonstrated findings consistent with areas of reversible ischemia in these distributions. CT Angiography Head/Neck showed occlusion of the right internal carotid artery as well as a second, tandem lesion within the superior M2 division of the right middle cerebral artery (MCA) distribution. A decision was made with the neurologist to administer thrombolytics. The neuro-interventionalist was consulted and performed mechanical thrombectomy with reperfusion of the right MCA division. Despite maximal medical therapy during the patient’s hospital stay, the patient’s neurologic outcome never improved, and she was made comfort measures only three days later. The patient died several hours after being made CMO.

DISCUSSION: An estimated 10% of patients presenting with acute ischemic stroke in the first 6 hours and 9 percent of patients in the 6- to 24-hour window may qualify for mechanical thrombectomy. Multiple randomized control trials (MR CLEAN, ESCAPE, REVASCAT, SWIFT PRIME, EXTEND IA, DAWN) have demonstrated the superiority of endovascular therapy compared to standard therapy with thrombolytics in select patients with acute ischemic strokes. For patients demonstrating large arterial occlusions within twenty-four hours, consulting a neuro-interventionalist to consider possible mechanical thrombectomy is critical in delivering optimal care and improving patient outcome.
Abstract #52: NON-SUSTAINED POLYMORPHIC VENTRICULAR TACHYCARDIA AFTER MODIFIED VAGAL MANEUVER FOR SVT
Dr. Kim Vogelsang - OU Department of Emergency Medicine
Dr. Emily Fisher - OU Department of Emergency Medicine

INTRODUCTION: Supraventricular Tachycardias (SVTs), particularly atrioventricular nodal reentry tachycardia (AVNRT), is not an uncommon complaint seen in the emergency department and often treated successfully both in hospital and prehospital. The initial recommended treatment for these narrow complex tachycardias is to perform a vagal maneuver. It is considered a relatively safe, first line treatment for termination of the tachycardia. Approximately 20-30% of SVT’s are successfully terminated with a vagal maneuver. Patients with no underlying structural heart or EKG abnormalities undergo observation in the ED and then are discharged home with cardiology follow up.

CASE REPORT: A 22 year old male presents to the emergency department with left upper quadrant (LUQ) abdominal pain. Heart rate was noted in the 230’s in triage so an EKG was obtained showed SVT at a rate of 220-230. Patient notes that he began feeling LUQ discomfort, dizziness and shortness of breath 1 hour prior to arrival. Denies any prior history of SVT but does report the occasional panic attack and anxiety. No history of sudden cardiac death in the family, no recreational drug use, otherwise healthy.

A modified vagal maneuver was performed to terminate the rhythm. After the maneuver, there was an 8 second episode of polymorphic ventricular tachycardia (VT) noted on cardiac monitoring during which the patient experienced a near syncopal episode characterized by lightheadedness, nausea, tunneling of vision and tingling in his arms bilaterally before to converting into normal sinus rhythm where the patients symptoms rapidly abated. EKG after showed normal PR interval, normal QT interval and morphology, regular rhythm with the initial rhythm being AVNRT. Echo was normal, no structural abnormalities noted. Laboratory values including magnesium, TSH, potassium were normal.

DISCUSSION: Non-sustained polymorphic VT (NSPVT) is a rare but occasionally noted phenomenon highlighted by several case reports that can occur while performing vagal maneuvers to terminate AVNRT in an otherwise healthy patient. They are often self-limited and do not result in complication. It is hypothesized that this may be related to autonomic and myocardial instability in response to a strong vagal response after a prolonged period of sustained very rapid tachycardia. Administration of adenosine is noted to occasionally to cause brief episodes of NSPVT in otherwise healthy patients with little to no consequence. This case emphasizes the need for availability of resuscitation equipment and proper cardiac monitor while performing vagal maneuvers.
Abstract #53: BEDSIDE ULTRASOUND DIAGNOSIS OF RUPTURED ABDOMINAL AORTIC ANEURYSM PRESENTING AS GENERALIZED SEIZURE
Dr. Bassam Aldeeb - University of Oklahoma School of Community Medicine Department of Emergency Medicine
Dr. Lori Whelan - University of Oklahoma School of Community Medicine Department of Emergency Medicine

INTRODUCTION: The abdominal aorta is the most common site of arterial aneurysm. Approximately 15,000 patients rupture an abdominal aortic aneurysm (AAA) every year and without immediate repair it is nearly always fatal with a mortality rate as high as 90%. Despite advancements in management and surgical techniques, mortality following open repair of ruptured AAA is still approximately 30-50%.

Prompt Imaging is necessary to confirm the diagnosis of AAA and ultrasound is the most commonly used screening modality.

CASE REPORT: A 45-year-old African American male who was found to be seizing in the waiting room was brought immediately to an exam room. The patient now appeared postictal, was diaphoretic with initial B/P of 60/40 and was unable to respond to questions. We were told his initial chief complaint was abdominal pain. Bedside ultrasound was performed to quickly determine the etiology of his hypotension, ruling out cardiogenic shock, obstructive shock, pericardial tamponade, tension pneumothorax, and free fluid in the abdomen. Bedside ultrasound did show a large unusual mass in the left upper quadrant as well as a very large abdominal aorta with a concern for rupture.

HOSPITAL COURSE: Massive transfusion protocol was initiated and patient was immediately taken to CT scan. He was found to have a large rupturing AAA with extensive retroperitoneal hemorrhage but stabilized after transfusion. Vascular surgery was immediately consulted, evaluated the patient, and emergently took the patient to the OR where he had a successful repair of his ruptured AAA. Of note, CT imaging also showed left renal artery pseudoaneurysm, multicystic kidneys and a large mass on the right kidney which was biopsied, revealing renal cell carcinoma. The patient’s post-operative course was otherwise uneventful and he was discharged on post-operative day 10 with follow-up for a right nephrectomy and genetic counseling due to suspicion of connective tissue disorder which would explain the cause of an AAA rupture in a relatively younger patient.

CONCLUSION: This was an unusual presentation of AAA rupture with an initial presentation of seizure most likely due to hypoxia from hemorrhagic shock. Rapid bedside ultrasound utilization is crucial in the evaluation of the patient presenting with undifferentiated shock as it not only quickly narrows the differential diagnosis, it also allows providers to confidently initiate treatment and consult the correct specialists in cases where every second counts.
Abstract #54: TREATMENT AND STABILIZATION OF THYROTOXICOSIS IN THE POSTPARTUM SETTING

Dr. Samuel Wilson - University of Oklahoma-Tulsa, School of community medicine, department of emergency medicine
Dr. Lori Whelan - University of Oklahoma

INTRODUCTION: Thyroid storm in the postpartum setting has a wide differential including: Pre-eclampsia, endometriosis with sepsis, pulmonary embolism, and postpartum cardiomyopathy. Quick recognition of patient’s symptoms and ruling out other severe diagnoses is important for patient survival.

CASE REPORT: 24 year old female G1P1 presented three days after emergency cesarian section with progressive dyspnea. Patient was discharged home from another facility earlier that morning with propranolol for hypertension. Patient lives out of state and did not receive any prenatal care in this state. She stated that she has a past medical history of Graves Disease, currently taking PTU.

Upon arrival to the emergency department, the patient’s vitals were unstable with tachycardia, hypertension, tachypnea, and fever. Patient was diaphoretic and in mild respiratory distress. Patient’s exam was notable for rales throughout her lung fields and her cesarian section incision was clean dry and intact without tenderness over the uterus. She was presumed to have preeclampsia and was started on IV magnesium. Patient’s dyspnea and tachycardia worsened. Chest x-ray showed pulmonary effusion, magnesium infusion was stopped. CT showed no pulmonary embolism but showed significant bilateral effusion. Patient placed on labetalol and furosemide with improvement in symptoms and vital signs. Patient’s labs began resulting and showed undetectable TSH with significantly increased free T4 and free T3. Patient was admitted to critical care and improved with beta blocker administration. Patient was discharged three days after admission with propranolol and propylthiouracil.

DISCUSSION: Thyroid storm is a rare hypermetabolic state resulting from excess thyroid hormone that is often fatal without proper diagnosis and timely treatment. Graves disease is the most common cause of thyroid storm, consisting of approximately 80% of cases. Thyroid storm is most often generated by physiologic stress, such as infection, surgery, or trauma. Our patient’s presentation was likely elected by her recent pregnancy and cesarian section. However, her recent pregnancy also made her higher risk for pulmonary embolism, preeclampsia, and infection. By ruling out the other diagnosis and recognizing her past medical history of Grave’s disease, the diagnosis was made. The patient was correctly treated with beta blocker therapy and PTU.

CONCLUSION: Patients in the postpartum period are at a higher risk for many severe disease states. Recognition of this patient’s symptoms and past medical history lead to a correct diagnosis of thyroid storm. Treatment of thyroid storm is preventing furthering of the hyper metabolic state then preventing thyroid hormone production and release.
Abstract #56: UNUSUAL CASE OF MAGNET INGESTION
Dr. George-Thomas Pugh - OU Department of Emergency Medicine
Dr. Cecilia Guthrie - Department of Pediatrics, Emergency Medicine
Dr. Joshua Gentges - OU Department of Emergency Medicine

INTRODUCTION: Magnet ingestion is often seen in Pediatric Emergency Departments. Consequently, when more than one magnet is ingested at the same time, loops of intestine can be squeezed between them resulting in bowel damage, perforation, or fistulae formation. Thus, magnet ingestion now represents a prominent topic of discussion.

CASE REPORT: The patient is a 12-year-old male with 1-1/2-year history of abdominal pain seen by gastroenterology multiple times without definitive diagnosis. While at his pediatrician's office, a KUB was taken and magnets in his abdomen were discovered. The patient then revealed that his sister dared him to eat a string of magnets 1.5 years ago. Formal work-up was delayed because symptoms were thought to be the result of social anxiety from starting middle school.

Patient presented to the ED with stable vital signs. Physical examination revealed diffuse abdominal tenderness without signs of peritonitis. A KUB was repeated confirming suspicion. CT scan revealed 7 objects located in the proximal jejunum near the ligament of Treitz. Patient was admitted to GI service for serial KUB's, testing for transit, and started on MiraLAX bowel cleanout. Upper GI was negative for bowel obstruction/contrast extravasation. Patient was then taken to the OR for an exlap where a small enterotomy was made and seven magnets were retrieved. Patient was primarily repaired, closed, and discharged home on post-op day 5.

DISCUSSION: National Electronic Injury Surveillance documented 22,000 pediatric cases of ingested magnets. This data revealed a 5-fold increase comparing the first 2 years to the last two years in their analysis from 2002-2011. The North American Society for Pediatric Gastroenterology, Hepatology, and Nutrition conducted surveys of 1,747 members in August 2012 reporting 354 magnet ingestions. The survey showed 8% of cases requiring surgical intervention of which 16% resulted in bowel resection and 62% repair of perforation or fistula. This organization published an algorithm based on expert opinion. Pediatric chronic abdominal pain work-up hinges around “alarm symptoms,” which the patient lacked, leading to a delay in imaging and diagnosis, calling into question whether earlier imaging should be incorporated in chronic abdominal pain workup.

CONCLUSION: Magnet ingestion is a rising popular topic with the availability and prevalence of magnets increasing. Further literature review and research is warranted to determine if delayed presentation is becoming more common as magnets become more ubiquitous. If so, chronic abdominal pain diagnostic pathways may need to be updated, to avoid missing these subtle presentations.
Abstract #94: SYSTEMIC LOXOSCELISM: A RARE COMPLICATION OF BROWN RECLUSE ENVENOMATION

Dr. Jay Scarborough - University of Oklahoma-Tulsa, School of community medicine, department of emergency medicine
Dr. Lori Whelan - University of Oklahoma

INTRODUCTION: Systemic Loxoscelism is a syndrome that manifests as a rare complication from envenomation from the *Loxosceles reclusa* which is commonly known as the brown recluse spider. Although there is usually little to no envenomation, tissue necrosis is the most well known complication of significant envenomation, which usually results in a necrotic and slow healing wound with mainly cosmetic complications. Systemic Loxoscelism is the most severe complication and may lead to rhabdomyolysis, disseminated intravascular coagulation, hemolysis, renal dysfunction, and death. There is no effective treatment or anti-venom known at this time.

CASE REPORT: An 18 year old female initially presented to the emergency department complaining of a painful red spider bite with concern that the spider was a Brown Recluse. She denied systemic complaints at the time. Exam was positive only for a small red area which was consistent with an insect bite which was outlined with a marker. Appropriate wound care, pain control, and return precautions were given, and the patient was discharged home. She returned to the ED 9 hours later, with worsening pain, vomiting, chills, and dyspnea. The bite wound was now blue and irregular with borders that expanded past previous markings and she had also developed tachycardia, and was generally ill appearing. While in the ED, the patient developed a fever and was found to have a leukocytosis, therefore meeting multiple systemic inflammatory response syndrome criteria. She was admitted for supportive care and further monitoring for complications, with strong clinical suspicion of Systemic Loxoscelism. Her systemic symptoms continued requiring ongoing inpatient supportive care, and the wound later became necrotic. On day 7 of her hospital course she developed hypoxia due to acute interstitial pulmonary edema and was upgraded to the intensive care unit. The patient then manifested significant hemolytic anemia with the nadir at day 10 of her hospital course requiring multiple blood product transfusions. She improved and was later discharged from the hospital in stable condition.

DISCUSSION: Our patient had a good clinical outcome in the face of a severe and rare complication of *Loxosceles reclusa* envenomation. This outcome is likely attributed to early recognition, excellent supportive care, and effective communication of return precautions. Although insect bites are an extremely common and benign compliant in the ED, it is important to recognize systemic symptoms and admit for observation for severe compilations.
Family Medicine
Abstract #44: SUSPECTED SYNDROME OF INAPPROPRIATE ANTIDIURETIC HORMONE WITH SMALL CELL CARCINOMA

Dr. Simone Bigelow - The University of Oklahoma - Tulsa
Dr. Jennifer Weakley, MD - Ok
Dr. Chen Zephen - University of Oklahoma-Tulsa, School of Community Medicine, Department of Obstetrics & Gynecology

INTRODUCTION: Syndrome of inappropriate antidiuretic hormone (SIADH) is a condition where the body makes too much anti-diuretic hormone, thus retaining water. First described in lung cancer patients, it occurs in 15% of small cell lung cancer cases. Common causes of SIADH include CNS disturbances, malignancy, drugs, surgery, pulmonary disease, hormone imbalances, HIV infection, and hereditary SIADH. We describe a case of SIADH in a patient with small cell lung carcinoma.

CASE REPORT: A 70-year-old female presented secondary to multiple falls and increasing weakness over the course of several weeks. Her only known past medical history was hypertension, and a remote history of tobacco use. Initial labs revealed profound hyponatremia at 111mEq/L and chest CT was concerning for a large left hilar mass, with associated pleural effusion and mediastinal lymphadenopathy. On physical exam she was euvoletic. Nephrology and pulmonology were consulted. Measured serum osmolality was low. Renal, thyroid and adrenal function were all normal; heart failure was unlikely given a normal BNP. Urine studies were obtained and revealed high urine osmolality with a low urine sodium. Patient was placed on fluid restriction and sodium tablets. Small cell lung cancer was confirmed by flow cytology. Oncology was consulted and she was started on palliative radiation in an attempt to reduce tumor burden to allow for removal of chest tube. Due to her low urine sodium, the diagnosis of SIADH was questionable. Both fluid restriction and IV furosemide were attempted throughout her lengthy hospital stay; eventually her serum sodium did correct. The patient’s respiratory status continued to decline; BiPAP and hi-flow nasal cannula were initiated. Palliative care was consulted. She was placed on comfort measure and expired secondary to respiratory failure.

DISCUSSION: The diagnosis of SIADH is one of exclusion. This patient had normal kidney function; adrenal insufficiency and thyroid dysfunction were ruled out. While most patients with SIADH present with high urine sodium, there are cases in which urine sodium is low. Hypovolemia can present with similar labs, however this patient’s sodium corrected over the course of time with fluid restriction.

Conclusion: Hyponatremia is frequently encountered in primary care. Building a broad differential and excluding other diagnoses is important when evaluating patients with hyponatremia so appropriate and timely care can be administered.
Abstract #60: NEUROSYPHILIS IN A PATIENT WITH RECENT DIAGNOSIS OF HIV
Dr. Camille Robertson - OU-TU School of Community Medicine
Dr. Viviane Sachs - OU-TU School of Community Medicine

INTRODUCTION: Syphilis is a multi-stage, chronic infection affecting multiple systems. Neurosyphilis can present during any stage, but is usually symptomatic in late stages. We present a case of neurosyphilis in a newly diagnosed HIV-positive female.

CASE REPORT: A 28-year-old female with no significant past medical history presented to the ER multiple times with vague complaints, including sore throat, myalgia, fever, chills. Treated for tonsillitis and acute cystitis, other lab work was significant for mild anemia. Patient returned two weeks later with fever, lymphadenopathy, nausea. A pelvic exam showed cervicitis; gonorrhea and chlamydia swabs and Mono-spot later resulted as negative. Five days later, she returned to the ER given concern for viral meningitis with continued symptoms and new onset headache, neck swelling. Notable findings included worsening anemia and mild transaminitis. Discharged on antibiotics, she returned two days later with acute right-sided facial paralysis, and was found to be HIV-positive. Lumbar puncture was done. Patient was admitted and started empirically on antibiotics for tick-borne disease and HSV encephalitis. HIV RNA and CD4 count were ordered, along with RPR, CSF studies, and other tests. RPR was positive and benzathine penicillin 2.5 million units IM was administered. Infectious Disease consult suspected Bell’s Palsy due to neurosyphilis. CSF VDRL eventually resulted as nonreactive. Aqueous crystalline Penicillin G 18–24 million units/day, administered as 3–4 million units IV every 4 hours for 14 days was given. During the 17-day stay, she completed treatment for neurosyphilis, showing improvement of all symptoms. Discharge instructions included follow-up with Ophthalmology to rule out ocular syphilis and with Infectious Disease outpatient for further management of newly-diagnosed HIV.

DISCUSSION: Syphilis incidence in the U.S. increased 72% during 2013-2017. The majority of reported cases are among men, though cases among women continue to increase, resulting in more congenital syphilis. Immunocompromised patients with neurologic symptoms should be on high suspicion for neurosyphilis, and have diagnostic CSF testing. A treatable disease, syphilis’ effects can be long-lasting or permanent if not diagnosed and treated early. It can also increase the risk of acquiring other sexually transmitted infections, including HIV.

CONCLUSION: This case illustrates how the diagnosis and treatment of neurosyphilis can be delayed if not recognized in the primary care setting. Recognition of the signs and symptoms of syphilis, especially neurosyphilis, and initiation of appropriate management is crucial to preventing the irreversible damage this disease can cause, in addition to the public health ramifications.
Abstract #64: OSTEOMYELITIS ASSOCIATED WITH SURGICAL TOENAIL AVULSION
Dr. Chad Keeney, DO - OU-TU School of Community Medicine
Dr. Jennifer Weakley, MD - OU-TU School of Community Medicine

INTRODUCTION: Osteomyelitis is a bone infection usually caused by bacteria, mycobacteria, or fungi. It occurs most commonly in young children and older people, and is more likely to occur in people with comorbid conditions such as diabetes mellitus. Untreated osteomyelitis can lead to abscesses in nearby soft tissue and be life-threatening. We present a case of osteomyelitis with MRI-confirmed infection of the bone following a toenail avulsion.

CASE REPORT: A 66-year-old female with a past medical history of COPD and hypertension presented to the Emergency Department with complaints of pain in the left foot 4th digit. She had an outpatient toenail avulsion on this digit 2 weeks prior to presentation. At the post-procedure assessment, it was determined an infection had developed at the procedure site. The patient was started on Augmentin. On day 7 of Augmentin she presented to the ED with worsening pain and skin changes at the procedure site. Of note, she had no history of diabetes or neuropathy. Vital signs were stable. Initial labs were in normal range, including leukocyte count, though blood cell morphology showed vacuolated neutrophils and toxic granulation. X-ray of left foot showed no fracture with radiodensities projecting over the tip of fourth toe and soft tissue swelling. No soft tissue dessication was seen. MRI showed osteomyelitis of the distal phalange of fourth digit. Ankle brachial index showed normal blood flow in lower extremities. She was started on vancomycin and piperacillin-tazobactam. Surgery was consulted and followed up with amputation of left foot 4th digit at the metatarsal-phalangeal joint.

DISCUSSION: Toenail avulsion is a common outpatient procedure that rarely requires antibiotic therapy, however it does produce an open wound in an area at high risk of contact with pathogenic bacteria. While antibiotic prophylaxis is not recommended, proper patient education should be given for hygiene and procedure site monitoring. If infection occurs, typical bacteria include Staphylococcus aureus and in diabetics, Pseudomonas. Empiric therapy should take these pathogens into consideration.

CONCLUSION: With the potential severity of infection and degree of difficulty in keeping the area disinfected, a post-procedure visit following toenail avulsion is important to monitor healing. The current standard of care recommends follow up within a “reasonable amount of time.” Though this patient did not have diabetes or neuropathy, she developed a severe infection that required intensive treatment. It is important to discuss the potential of these outcomes, though rare, with patients upon procedural planning.
Internal Medicine
Abstract #5: INVASIVE PRIMARY MUCORMYCOSIS: RENAL RHIZOPUS

Dr. Tina Bui - The University of Oklahoma - Tulsa
Dr. Christopher Girgis - The University of Oklahoma - Tulsa
Dr. Pranay Kathuria - The University of Oklahoma – Tulsa

INTRODUCTION: Mucormycosis is a known entity among diabetics and immunosuppressed patients.¹ There are cases where the mucormycosis spectrum can involve individual organs, and in this case, the renal system.

Treatment is difficult as this fungus is angio-invasive and can cause tissue infarction, which limits antifungal penetration to the affected tissues. The choice of antifungal therapy has traditionally been set to amphotericin B in regards to mucormycosis, whether in systemic or focal disease.² However, in this case, posaconazole was a successful alternative treatment option to amphotericin.

CASE REPORT: We present the case of a 49 year white male with chronic kidney disease, uncontrolled diabetes, and a history of IV drug use. He initially presented to urgent care with right flank pain, dysuria, and hematuria on urinalysis and was sent home with a subsequent visit to the emergency department. There, hydronephrosis was noted on the right kidney and a ureteral stent was placed by urology. Approximately 2 weeks later, the patient followed up with urology to undergo uretero-renoscopy. However, this was postponed an additional 2 weeks due to severe hyperglycemia. After stabilization of glucose, the patient underwent the uretero-renoscopy, which revealed amorphous material within the right renal pelvis. Magnetic resonance imaging revealed a fungus ball with 60 percent of the volume of the right renal parenchyma consistent with pyelonephritis, as well as poor blood flow consistent with renal infarction. The lesion was biopsied and revealed Rhizopus species, with repeat renal biopsy demonstrating fungal colonization. Urine and blood cultures were negative. The patient was started on posaconazole, as opposed to amphotericin B, due to a relatively normal left kidney and overall clinical stability.

Due to the vascular and parenchymal invasion, nephrectomy was performed with pathology demonstrating extensive fungal pyelonephritis with abscesses. The patient continued with oral posaconazole for any microscopic remnants of the fungus for six weeks and did well with monitoring of chronic kidney disease and diabetes.

DISCUSSION: In most cases of reported isolated renal Rhizopus, amphotericin and nephrectomy are standard of care with an azole anti-fungal used as step down therapy or therapy in which the patient does not respond to amphotericin.³ With utilization of both posaconazole and nephrectomy, alternative to amphotericin B, the patient was able to maintain stable residual kidney function in an infection associated with high mortality and was successfully treated for isolated mucormycosis of the rhizopus group ⁴.
Abstract #18: JUMPING TO CONCLUSIONS MAY MISS THE RIPE DIAGNOSIS: ACUTE PERICARDIAL TAMPONADE SECONDARY TO TUBERCULOSIS IN AN ESRD PATIENT
Dr. Dru Albin - OU College of Medicine
Dr. Regmi Regmi - OU College of Medicine

INTRODUCTION: In endemic regions, the most common cause of pericardial disease is tuberculosis, however, the leading cause in developed countries is idiopathic, secondary to viral or autoimmune diseases. End stage renal disease (ESRD) predisposes patients to acquiring tuberculosis, but an initial evaluation of pericarditis within the United States frequently prematurely excludes the diagnosis. This patient case questions the frequency of tuberculosis within ESRD population as well as the lack of inclusion in the differential diagnosis.

CASE REPORT: A 53 year old African American male with past medical history of ESRD, diabetes mellitus, hypertension, and coronary artery disease presented to the emergency department with altered mental status and a syncopal episode during hemodialysis. He was hypotensive with consistent blood pressures around 80/50 mmHg. He was started on intravenous fluids with good response as well as broad spectrum antibiotics. Computed tomography scan of the chest was performed due to concern for pneumonia which revealed a moderate-large pericardial effusion and a large left sided pleural effusion. Ultrasound verified the pericardial effusion and remarked on tamponade physiology. Blood urea nitrogen was 62 at presentation. Cardiology was consulted and a pericardiocentesis was performed draining 280 cc of dark red fluid which contained 44% lymphocytes. Clinical suspicion for TB was high, and an acid fast stain of the aspirate was obtained which revealed acid fast bacteria. Interferon gamma release assay results were indeterminate. The patient was started on rifampin, isoniazid, pyrazinamide, ethambutol, and vitamin B6. The patient improved symptomatically and was to be followed in a tuberculosis clinic.

DISCUSSION: In general, chronic renal failure impairs the immune system and patients become more susceptible to infections. “Among patients...requiring renal replacement therapy, rates of TB 10- to 25-fold greater than those in the general population have been reported from the United States, Canada, Europe, and Japan, equating to incidence rates of approximately 250 cases per 100,000 per year (1–3).”

CONCLUSION: Even though uremic pericarditis is more common with ESRD patients in non-endemic regions, early evaluations of pericardial disease should take the increased prevalence of tuberculosis into consideration.
Abstract #20: SEVERE ACUTE HEPATITIS IMPROVED WITH CYCLOSPORINE IN DRESS SYNDROME
Dr. Elizabeth Tran - OU-TU College of Community Medicine, Dept of IM
Dr. Justin Reed - OU-TU College of Community Medicine, Dept of IM
Dr. Audrey Corbett - The University of Oklahoma – Tulsa

INTRODUCTION: Drug reaction with eosinophilia and systemic symptoms (DRESS) syndrome is a rare but fatal drug-induced hypersensitivity reaction with associated multi-organ failure (MOF). Liver injury is most common, resulting in hepatitis and/or progression to fulminant hepatic failure. Typical treatment is high-dose steroids but rapid clinical improvement has been seen with cyclosporine.

CASE REPORT: A 38-year-old female presented with seven days of diffuse rash, pruritus, lymphadenopathy, and facial swelling after starting allopurinol two months prior for acute gout. Admitting vital signs were stable. Initial labs notable for ALT 119, AST 85, and INR 1.5. CBC, CMP otherwise unremarkable. Hepatitis panel was negative. No history of ETOH or APAP use. RUQ ultrasound showed hepatomegaly. She was initially diagnosed with an allergic drug reaction but after a few days developed fever and ALT/AST continued to rise. This was accompanied by rising eosinophilia and atypical lymphocytes. Dermatology was consulted and initiated high-dose steroids empirically. Punch biopsy showed poor lymphocytic interface dermatitis with eosinophils, confirming DRESS. Allopurinol deemed likely culprit as EBV and HHV-6/7 were negative. Despite steroids, she continued to clinically worsen with ALT and AST peaking at 972 and 172, respectively; INR did remain stable. Cyclosporine 4mg/kg was then started. Rapid improvement occurred and ALT/AST immediately reduced within one day. She was eventually discharged and followed up with dermatology outpatient. She remained on a prednisone/cyclosporine taper without additional flares.

DISCUSSION: DRESS is a rare and life-threatening drug reaction often associated with a delayed latency period of 2 to 8 weeks with mortality of up to 10%. It is often associated with anticonvulsants and allopurinol. Hallmark features include fever, pruritus, maculopapular rash, facial edema, lymphadenopathy, and MOF. The liver is most commonly affected, generally presenting in a hepatocellular manner or less often a cholestatic or mixed picture. First-line treatment is cessation of inciting drug but systemic steroids are often the mainstay therapy if MOF occurs. However, case reports have shown quick improvement in MOF, particularly hepatitis, with initiation of cyclosporine, especially when steroids are ineffective/contraindicated. Our patient was a non-responder to high-dose steroids but quickly improved after starting cyclosporine. Based on our case study, we recommend rapid initiation of cyclosporine to steroid non-responders especially in the setting of DRESS-induced hepatitis.
Abstract #21: SUCCESSFUL REMISSION OF SEVERE PALMOPLANTAR PUSTULOSIS
Dr. Justin Reed - OU-TU College of Community Medicine, Dept of IM
Dr. Elizabeth Tran - OU-TU College of Community Medicine, Dept of IM
Dr. Audrey Corbett - The University of Oklahoma – Tulsa

INTRODUCTION: Palmoplantar pustulosis (PPP) is a rare skin disorder characterized by recurrent sterile pustule eruptions involving the palms and soles. The pustules often occur on an erythematous, hyperkeratotic plaque and are usually painful with associated intense pruritus and burning sensation.

CASE REPORT: A 37-year-old female presented with worsening, small oozing pustules on the palms/dorsal surfaces of her hands, which gradually became more painful over one month. On presentation, vital signs were stable. Initial labs notable for WBC 18 and HGB 8.6. CMP unremarkable. She had a documented latex allergy but denied new irritant exposures. She did have a similar episode years prior but not as extensive. She denied medications, tobacco use, or known autoimmune diseases. She was not on any medications, but she was prescribed a five day course of prednisone that she finished two days prior to arrival. Physical exam showed a severe pustular rash located on the palms and dorsal surfaces of her hands bilaterally, extending up the wrists in a glove-like distribution. Blood cultures and pustular fluid collections were obtained for fungal culture, HSV/VZV PCR, and syphilis screening. Dermatology was consulted and initiated empiric Cyclosporine 5mg/kg IV daily. Pustular punch biopsy showed sparse perivascula lympho-histiocytic and eosinophilic infiltrate within the dermis, confirming PPP. She showed a dramatic improvement by day 5 of treatment with near-complete pustular resolution. She did have an expected increase in ALT and AST from treatment, peaking at 169 and 190, respectively. She was eventually discharged on a 4 week taper of cyclosporine therapy with outpatient follow up with dermatology.

DISCUSSION: PPP classification remains controversial as some revere it as a psoriasis variant given certain clinical similarities, while others deem it an independent entity. As such, the exact pathophysiology is yet to be fully understood. Interestingly, abrupt cessation of steroids have been shown to be risk factor for developing acute flares as seen in this case. Diagnosis can be made clinically, but punch biopsy can be confirmative, typically showing a diffuse and mixed perivascular infiltrate within the dermis. Typical first-line treatment involves topical steroids but more severe cases often require long-term DMARD therapy. The disease can certainly have a devastating impact on a patient’s quality of life. Although PPP is an incurable disease, it is crucial to recognize PPP flares as remission can quickly be established and long-term preventive strategies can be established.
Abstract #32: APPENDICEAL CARCINOMA: A FEARED IMITATOR OF ACUTE APPENDICITIS

Mr. Mark Street - OU-Tulsa Department of Internal Medicine
Dr. Eugene Quaye - OU-Tulsa Department of Internal Medicine
Dr. Carmen Vesbianu - OU-Tulsa Department of Internal Medicine

INTRODUCTION: Intra-abdominal infections in elderly patients often have different etiologies than those seen in younger population. They can also present with less acute and delayed symptoms. Appendiceal carcinoma is a rare variant of colon cancer that frequently masquerades as other diagnoses, such as acute appendicitis. We present a case of 63-year-old woman who was initially thought to have ruptured appendicitis that was subsequently determined to be appendiceal carcinoma.

CASE REPORT: A 63-year-old woman with history of hypertension, type 2 diabetes, anxiety, and depression presented to the resident clinic with a 6 week history of worsening sharp, non-radiating RLQ pain. Associated symptoms included nausea, anorexia, and 10 pound weight loss. Patient reported that symptoms had developed after she had a colonoscopy 6 weeks prior. A CT abdomen and pelvis was ordered and showed “complex inflammatory process in the right abdomen extending along the paracolic gutter” with complex “stranding and fluid density.” She was referred to the hospital and was treated with broad spectrum antibiotics. Per surgery recommendation, a CT guided drain was placed for a developing peri-appendiceal abscess. She was discharged home to complete a total of 14 days of ciprofloxacin and metronidazole given marked clinical and radiographic improvement. Her drain was removed in the outpatient setting few weeks later.

She presented to the hospital 7 months later with a two week history of similar sharp RLQ pain, nausea, and anorexia. She was taken to the operating room for an exploratory laparoscopy revealing a mass-like structure protruding from the colon. The procedure was converted to an open laparotomy for a right hemicolectomy with ileocolic anastomosis. Pathological analysis showed adenocarcinoma of the appendix.

DISCUSSION: Appendiceal carcinoma is a rare malignancy comprising 1% of all colorectal malignancies and 1% of all appendiceal specimens. With the increasing conservative approach to management, appendiceal carcinoma is frequently missed and complications are allowed to develop. Age >40, absence of migratory right lower quadrant pain and imaging findings such as phlegmon, increased appendiceal width and wall thickness increase risk of appendiceal carcinoma. Interval colonoscopy or even appendectomy is warranted in such patients.

CONCLUSION: Appendiceal carcinoma remains an elusive diagnosis given its vague constellation of symptoms at presentation. However, patients >40 with complicated presentations of acute appendicitis may necessitate further investigation to potentially unmask an underlying appendiceal carcinoma.
Abstract #33: HERPES SIMPLEX ENCEPHALITIS: A CASE FOR EARLY CLINICAL SUSPICION

Ms. Chelsea McKenzie - University of Oklahoma-Tulsa, School of Community Medicine, Department of Internal Medicine, Section of Neurology
Mrs. Emily Bolender - University of Oklahoma-Tulsa, School of Community Medicine, Department of Internal Medicine, Section of Neurology
Dr. John Cattaneo - University of Oklahoma-Tulsa, School of Community Medicine, Department of Internal Medicine, Section of Neurology

INTRODUCTION: Herpes simplex encephalitis (HSE), a devastating neurologic HSV infection, is caused by spontaneous or stress-induced reactivation and spreading of latent infection predominantly to frontotemporal parenchyma. Exact incidence rates are unknown, but are estimated at roughly one case per million yearly. Typical presentation includes: fever, headache, confusion, decreased consciousness, or seizures; often with HSE specific features: aphasia, mutism, or personality changes. HSV antibodies on cerebrospinal fluid PCR are diagnostic. Alongside antivirals, treatment is symptomatic and supportive. Early clinical suspicion is imperative to optimize patient outcomes, but diagnosis is often delayed due to its vague and varied presentation and rare incidence.

CASE REPORT: We present the case of an 80-year-old woman who underwent evaluation for unretractable nausea and vomiting, mixed aphasia, and dysarthria. Neurology was consulted for possible stroke and initial CT was normal. The following day, she had worsening aphasia alongside intermittent delirium and fever despite resolved nausea and vomiting; neurologic exam and labs were otherwise normal. MRI revealed mild left insular and temporal lobe hyperintensities and EEG showed left temporal epileptiform discharges; IV acyclovir and fosphenytoin were initiated at this time, approximately thirty-three hours post-admission, since findings were suspicious for HSE and secondary temporal seizures. HSV-1 antibodies on CSF PCR confirmed diagnosis. Despite treatment, she had worsening respiratory distress and decreasing consciousness requiring ICU transfer. Over the course of 2 weeks, she gradually improved; and, before discharge to a skilled nursing facility, became more oriented even with continued minimal aphasia. Although she survived the initial course, prediction of long-term prognosis was difficult and long-term deficits are likely despite early intervention.

DISCUSSION: HSE causes significant sequelae despite aggressive treatment. Untreated it carries a 70% mortality rate, and, even with aggressive treatment, 20-30% succumb. Most survivors have refractory seizures and neuropsychological or neurobehavioral deficits, with few returning to pre-disease baseline. Antiviral therapy should begin promptly to decrease the severity of adverse outcomes, with initiation greater than 1 day post-admission showing a two-fold increase in morbidity and mortality. Often, HSE is excluded on initial differentials and therapy is delayed due to late diagnosis. Prompt brain imaging in patients with focal neurological deficits, alongside lumbar puncture, is associated with earlier diagnosis and intervention; and thus better outcomes. This case is an important reminder to always include broad differential diagnoses for vague presenting symptoms; to decrease delays in diagnosis by obtaining prompt imaging and LP; and to start antiviral therapy swiftly for suspected HSE.
Abstract #36: A RARE CASE OF LUPUS NEPHRITIS WITH CONCURRENT CHECKPOINT INHIBITOR USE

Dr. Justin Reed - OU-TU College of Community Medicine, Dept of IM
Dr. Elizabeth Tran - OU-TU College of Community Medicine, Dept of IM
Dr. Audrey Corbett - The University of Oklahoma - Tulsa
Dr. Alan Martin - Tulsa Bone and Joint Associates

INTRODUCTION: Immune checkpoint inhibitor (CPI) medication use is on the rise, showing substantial benefit when incorporated with various cancer treatments. However, CPI drugs have the potential risk of creating de novo or exacerbating preexisting autoimmune diseases due to their mechanism of action of blocking intrinsic down-regulators involved in immunity. Patients with pre-existing autoimmune diseases are particularly at risk, which has created new challenges for rheumatologists.

CASE REPORT: We present a 59 year-old female PMH controlled SLE on Plaquenil and Methotrexate who was diagnosed with stage IV NSCLC. After 5 months of chemotherapy and failure to achieve remission, she was transitioned to Nivolumab, a PD-1 inhibitor. She then developed an acute onset of systemic neuropathy with new, diffuse arthralgia and daily morning stiffness. Nivolumab was continued. She was started on a 12-day Prednisone 30mg taper but had no relief. Severe proteinuria subsequently occurred with urine protein-to-creatinine ratio reaching 1,767 mg/g. She was switched to daily Prednisone 40mg with mild improvement. However, her proteinuria worsened over the next month with a 24-hour urine protein of 4.3g. A renal biopsy revealed combined class III/V lupus nephritis with minimal interstitial fibrosis and tubular atrophy. Prednisone was increased to 60mg daily, and Nivolumab was held. Cellcept 500mg BID x1 week and 1g BID thereafter was started. With treatment, her neuropathy and arthralgia slowly dissipated. Repeat urine protein-to-creatinine ratio improved to 203 mg/g with +DS DNA Ab returning to pre-CPI treatment baseline of ~183 IU/mL. Currently, Nivolumab remains held. Alternatives are being discussed as recent imaging revealed a 2cm mass lateral to trachea suspicious for cancer progression.

DISCUSSION: There is limited data regarding worsening autoimmune diseases with CPI therapy. However, a recent study showed approximately 50% of patients with pre-existing autoimmune disease experienced rheumatologic complications, regardless of disease status. Since 2016 there has been only one reported case of lupus nephritis developing while on CPI. Treatment recommendations entail quick recognition and evaluation of reaction severity. Although withholding the CPI is not always necessary, they are often discontinued for a brief period in more severe cases with glucocorticoids typically implemented. As in this case, secondary immunomodulatory therapy might be needed in refractory reactions. Evaluation for optimal timing and creation of treatment guidelines will hopefully be established as clinical experience progresses. Nevertheless, with CPI drugs coming to the forefront in the field of oncology, it is crucial that rheumatologists are aware of these effects for their patients.
Abstract #45: PANUVEITIS AS INITIAL PRESENTATION OF SYPHILIS IN AN ACTIVE INTRAVENOUS DRUG USER

Dr. James Fenska - Department of Internal Medicine, University of Oklahoma School of Community Medicine, Tulsa, OK
Dr. Janitzio Guzman - Department of Pediatrics, Section of Internal Medicine/Pediatrics, University of Oklahoma School of Community Medicine, Tulsa, OK
Dr. Jabraan Pasha - Department of Internal Medicine, University of Oklahoma School of Community Medicine, Tulsa, OK

INTRODUCTION: Despite overall improvements in the prevalence of syphilis, incidence of these infections has increased over the last decade. Intravenous drug users (IVDU) and sexual partners of IVDU have recently emerged as populations at particular risk of infection. Identifying syphilis infections in this population may be challenging because of barriers to care of IVDU, meaning these patients may present later in the course of disease. Later and more severe infection, including tertiary syphilis, neurosyphilis, or ocular syphilis as in our patient, may be the initial presenting symptom.

CASE REPORT: We present the case of a 46-year-old woman with active IVDU, who presented initially to the Emergency Department (ED) with right-sided eye pain and scleral injection, with mild vision loss and photophobia. She was referred to ophthalmology, who prescribed topical steroid drops, but was lost to follow-up until 2 months later. She again presented to the ED with worsening severe right-sided eye pain and new-onset pain and photophobia in her left eye. She left against medical advice (AMA) when admission was recommended, but returned to the ED 5 days later to seek inpatient treatment. Physical exam showed scleral injection with near-total vision loss in the right eye, and a desquamating rash on her palms and soles. Serum and cerebrospinal fluid (CSF) Venereal Disease Research Laboratory tests, and CSF Fluorescent Treponemal Antibody-Absorption test were positive. She was admitted to complete a 2-week course of IV penicillin, which was complicated by frequent absences from her room, threats to leave AMA, and concerns for in-hospital methamphetamine use. Despite the advanced stage of her presentation, at discharge her eye pain had resolved, visual acuity was nearly at baseline, and rashes were nearly resolved.

DISCUSSION: This case represents an unusual presentation of neurosyphilis in a heterosexual woman with active IV methamphetamine use. An under-recognized population engaging in high-risk sexual activity includes IVDU and their sexual partners. Given the potentially strained physician-patient relationship in this population, it is crucial to perform a thorough exposure history and physical examination, and to take steps to establish a therapeutic alliance with these patients. Physicians must recognize barriers to care in these patients, as delays in care in the insidious early stages of syphilis infection would delay detection and treatment until more severe manifestations are present. We propose that syphilis should be considered early in the differential of these patients.
Abstract #47: A MYSTERIOUS CASE OF DRUG INDUCED LUPUS NEPHRITIS

Dr. Amru Swar - OU-Tulsa Department of Internal Medicine
Dr. Chelsea Therrien - OU-Tulsa Department of Internal Medicine
Dr. Krishna Baradhi - OU-Tulsa Department of Internal Medicine

INTRODUCTION: Hydralazine induced lupus is a rare entity which can cause serious disease. Certain drugs are well implicated in triggering this syndrome. Internists should be well versed in identifying symptoms that can manifest from these medications as stopping the drug is life-saving.

CASE REPORT: A 48 year old male with a history of hypertension, heart failure and anxiety presented with a 6 month history of progressive fatigue, exertional dyspnea, and unintentional weight loss over the last 2 months. Initial lab work revealed leukopenia, severe anemia and an acute kidney injury. Urine studies showed significant proteinuria and hematuria. Immunologic studies obtained revealed a positive ANA and anti-histone antibodies. Anti-ds-DNA was negative. Renal biopsy was done to further evaluate and patient was started on dialysis in the interim period. The biopsy revealed diffuse proliferative immune complex trapping glomerulonephritis. Given a positive anti-histone antibody and daily high dose hydralazine use, findings were consistent with a diagnosis of hydralazine induced lupus nephritis. He received multiple sessions of hemodialysis, daily prednisone, and cyclophosphamide. Despite high dose immunosuppression, his disease remained refractory and he continued to be dialysis dependent.

DISCUSSION: Drug induced lupus is a rare but serious side effect of certain medications. It can occur in 5-10% of patient’s taking hydralazine and is dose dependent. Our patient had been on hydralazine for hypertension at a dose of 300 mg a day for 8 years. Doses above 200 mg/day equate to a 10.4% risk of developing drug-induced lupus. This risk is more common in patients who are slow acetylators or who have the HLA-DR antigen. Patients with drug induced lupus are usually positive for anti-histone and ANA but negative for dsDNA. Our patient did test positive for ANCA which is unusual but has been cited before. Given this finding, one would suspect a vasculitis as the cause of his kidney disease but biopsy was consistent with crescentic lupus nephritis.

Drug induced lupus should be suspected in any patient taking implicated medications with symptoms like idiopathic lupus. Work up includes ANA, anti-histone and anti-dsDNA antibodies along with a detailed history and physical exam. Treatment consists of stopping the culprit drug. Research suggests that certain genetic factors may pre-dispose patients to developing this condition. With genetic testing becoming more accessible, these tools may be used to help tailor treatment regimens and avoid adverse effects.
Abstract #49: ARTHRITIS AND PARASPINAL MYALGIAS: A CASE OF BROWN HEROIN SYNDROME

Mr. Mohsain Gill - College of Medicine, University of Oklahoma School of Community Medicine
Dr. Tyler Gutschenritter - Department of Internal Medicine, University of Oklahoma School of Community Medicine
Dr. Audrey Corbett - Department of Internal Medicine, University of Oklahoma School of Community Medicine

INTRODUCTION: A unique constellation of musculoskeletal symptoms in users of intravenous brown heroin was described by Pastan et al. in a 16-patient case series. The triad of fever, paraspinal myalgias, and migratory periarthritis, in the absence of infection, withdrawal syndrome, and hepatitis-related vasculitis or arthropathy was reported in each case. This unusual musculoskeletal syndrome was thought to be caused by a toxic- and/or immune-mediated reaction to brown heroin (i.e. heroin containing adulterants commonly procaine or papaverine). The use of antibiotics did not affect symptom course, rather supportive care and NSAID use was the mainstay of treatment with average symptoms lasting 13 days.

CASE DESCRIPTION: 51-year-old female with untreated hepatitis C and ongoing intravenous (IV) brown heroin use presented with sudden-onset debilitating joint pains. On similar previous admissions, she was diagnosed with septic arthritis and lumbar myositis. Due to aspiration cultures remaining negative, she was discharged on a 4-week course of broad-spectrum IV antibiotics due to high suspicion. She resumed IV heroin use after discharge and experienced sudden-onset, diffuse, migratory joint pain and myalgias. On admission, she had a fever of 38.1 °C with left wrist, ankle, and MTP/MCP swelling, tenderness and warmth as well as paraspinal cervical and lumbar myalgias. Laboratory evaluation showed CRP 9.4, rheumatoid factor 40, and anti-nuclear antibody 1:640 with homogenous pattern. CPK, aldolase, hepatitis A/B, TSH, uric acid, ESR, and urine gonorrhea/chlamydia were all within normal limits. MRI of cervical/thoracic/lumbar spine showed paraspinous inflammatory changes at L4-L5. L5 aspiration cultures remained without growth or crystal formation. Transthoracic echocardiogram was negative for endocarditis and blood cultures remained negative. Joint effusions resolved within 72 hours of appearance without intervention. Her pain and functionality slowly improved with cessation of heroin, NSAIDs, and physical therapy. She was able to be discharged home after 7 days with outpatient follow-up for cessation of heroin use.

DISCUSSION: Brown heroin musculoskeletal syndrome is a diagnosis of exclusion in the absence of common causes of arthropathy, myalgia, and fever in IV drug users. Although the patient has known hepatitis C, her presentation, elevated inflammatory markers and non-diagnostic autoimmune panel findings suggest an immunemediated phenomenon related to the adulterants used to create brown heroin. This is a rare disorder and commonly mistaken for septic arthritis or myositis. Misdiagnosis results in costly treatment and extended antibiotic courses. We hope that this report will help gain recognition and encourage further investigation into the etiology of this unusual syndrome.
Abstract #51: UNEXPLAINED REFRACTORY LACTIC ACIDOSIS
Mr. Bishr Swar - University of Oklahoma - College of Medicine, Tulsa, OK
Dr. Oliver Cerqueira - University of Oklahoma - College of Medicine, Tulsa, OK

INTRODUCTION: Lactic acidosis is an acid-base disorder where elevated lactate levels cause a metabolic academia. Elevated lactate levels are typically encountered in sickly patients and commonly used as a diagnostic and prognostic tool in ICU settings. While it is the most common cause of metabolic acidosis in hospitals, persistently elevated levels in the ambulatory setting have not been reported.

CASE REPORT: A 48 year-old female presented to clinic for hospital follow-up. She was admitted 10-days before with acute-onset LUQ and flank pain, nausea, and emesis diagnosed as acute pyelonephritis. During her two-day hospitalization, lactic acid (LA) levels were elevated and trended from 3.4 to 4.2 to 4.3 with unclear etiology. She was treated with IV antibiotics resulting in symptom resolution and discharged on an extended course of antibiotics and told to hold metformin and follow-up on acidosis with PCP. Patient was readmitted later that day after recurrence of similar symptoms. Extensive work-up was performed including EGD, CT abdomen/pelvis, and small bowel studies. Based on the results, patient was presumed to have diverticulitis. She was treated with IV antibiotics and bowel rest. Throughout this stay, LA levels remained elevated at 2.9 and 2.4 but decreased to 1.5 at discharged. At follow-up, patient reported resolution of symptoms with oral antibiotic course but LA level was found to be elevated again at 3. At follow-up two weeks later, LA level had increased to 3.5. Patient reported continued baseline health and was instructed to discontinue metformin as we trend LA. After holding metformin for 3 months, repeat LA levels remained elevated at 3.7. Patient was restarted on metformin for now uncontrolled diabetes and a thorough review of her history was done to identify an etiology. No causes of increased LA production, decreased lactate utilization, or others including medications and malignancies could be identified.

DISCUSSION: This case is unique as no literature can be found demonstrating unexplained persistently elevated LA in healthy individuals in the ambulatory setting. It illustrates the large knowledge gap in understanding LA. This case sheds light on important implications of LA including how it can be evaluated, why do and for how long elevated levels persist, and how can it be interpreted in the acute setting when a patient actually presents with sepsis. It also supports many studies/meta-analysis that show no association between increased levels of lactate and metformin. This case can hopefully ignite future studies to help better understand LA.
Abstract #57: IMMUNOCOMPROMISED: AN UNDERLYING RISK FACTOR FOR DISSEMINATED GONORRHEA

Mr. MOHAMED ESLAM - University of Oklahoma School of Community Medicine - Department of Internal Medicine
Dr. Eugene Quaye - University of Oklahoma-Tulsa, School of Community Medicine, Department of Internal Medicine
Dr. Jabraan Pasha - University of Oklahoma School of Community Medicine, Department of Internal Medicine

INTRODUCTION: Gonorrhea bacteremia and sepsis is an exceedingly rare manifestation typically occurring in patients with immunodeficiency. Disseminated gonorrhea occurs in 0.5-3% of patients typically manifesting as an oligo or polyarthritis-dermatitis syndrome. Presented here is a case of N. Gonorrhea bacteremia in a 39 yo immunocompromised male secondary to HIV.

CASE REPORT: A 39 yo male with PMHx of HIV off antiretroviral therapy for over a year presented with complaints of fatigue, subjective fevers and chills, non-productive cough and dyspnea. He denied any arthralgia, genital discharge, intercourse, or rash in the weeks to months preceding presentation to the hospital but admitted recent use of IV methamphetamine as well as an episode of oral sex two weeks prior to presentation. He was septic at presentation with leukocytosis of 14.5, temp 39.3, and tachypnea. CT abdomen and pelvis were concerning for possible cholecystitis which was ruled out with a HIDA scan. He was started on vancomycin, cefepime and trimethoprim/sulfamethoxazole for PJP prophylaxis. His blood cultures grew beta lactamase negative Neisseria Gonorrhea which prompted changing his cefepime to ceftriaxone. He later developed conjunctivitis which was treated with gentamicin drops. Antibiotics were deescalated to oral doxycycline after repeat blood cultures were negative. He was also given 1g of azithromycin due to increased efficacy of combination therapy compared to ceftriaxone only. Further infectious work up showed HIV 1 viral load of 12,903, CD4 count of 164, negative Hep C viral load, negative syphilis serology, negative CSF smear for Cryptococcus and negative Histoplasma antigen. Trans-esophageal echocardiogram was negative for endocardial involvement. The patient was discharged home with infectious disease follow-up.

DISCUSSION: Neisseria gonorrhoea is a gram negative bacteria which typically manifests as localized mucosal infection and oligo or polyarthritis-dermatitis syndrome. Rarely, disseminated infection manifests as myocarditis, meningitis, osteomyelitis, vasculitis or occasionally abscesses. Blood and synovial fluid cultures in disseminated infection are typically negative suggesting immune mediated mechanism although not clearly understood. Isolated case reports have identified immunocompromise, hepatic disease and complement deficiencies as risk factors for disseminated infection. This case reports the rare occurrence of Neisseria bacteremia and highlights atypical presentations of infections in immunocompromised patients. It highlights the importance of keeping a broad differential when dealing with immunocompromised patients. As this case illustrates, immunocompromised patients do not always present in the typical way expected for a specific diagnosis.
Abstract #58: LOOKS CAN BE DECEIVING: POSTURAL ORTHOSTATIC TACHYCARDIA SYNDROME, THE INVISIBLE DISEASE

Dr. Rachel Wilson - University of Oklahoma-Tulsa, School of Community Medicine, Department of Internal Medicine
Dr. Fahad Sharwani - University of Oklahoma-Tulsa, School of Community Medicine, Department of Internal Medicine
Dr. Elizabeth Tran - OU-TU College of Community Medicine, Department of Internal Medicine
Dr. Bernadette Miller - OU-TU College of Community Medicine, Dept of IM

INTRODUCTION: Postural orthostatic tachycardia syndrome (POTS) is a poorly understood and frequently missed diagnosis seen in otherwise healthy young patients. The pathophysiology is not well understood but involves impairment of sympathetically-mediated vasoconstriction, excessive sympathetic drive, volume dysregulation, and deconditioning. True prevalence is unknown as it often goes undiagnosed since symptoms are vague and not physically apparent to evaluating providers.

CASE REPORT: A 38 year-old female with no significant history presented with a 5-year history of constitutional symptoms including episodes of hypotension, fatigue, lightheadedness, pre-syncope, palpitations, tachycardia, jitteriness, bloating/constipation, and cold intolerance. Vital signs were normal and physical exam showed only mild joint hypermobility. An extensive laboratory examination did not provide any helpful clues. The patient’s episodes were thought to by hypoglycemic events or paroxysmal SVT, but work up for these was also negative. Given the combination of symptoms and unrevealing workup, the diagnosis of POTS was finally suspected. Tilt table testing was positive with a syncopal episode and a dramatic drop in blood pressure and heart rate during the test. Conservative measures were advised, including adequate hydration, compression stockings, low impact exercise in moderation, and avoiding eating immediately before exercising, but episodes continued. She was trialed on Acetazolamide with clinically significant symptom improvement. Evaluation for possible Ehlers-Danlos syndrome is underway given its high association with POTS and our patient’s hypermobile joints.

DISCUSSION: The etiology of POTS remains poorly understood. Management consists of controlling symptoms with medications targeted to treat the underlying pathophysiologic mechanism. Our patient’s symptoms significantly improved with Acetazolamide, likely due to the inhibition of erythrocyte carbonic anhydrase resulting in improved oxygenation to the brain. Patients with the vascular type of Ehlers-Danlos syndrome have deficient Type III Collagen, which plays a key role in blood vessel strength. It is thus conceivable that this collagen defect increases the elasticity of the body’s vasculature, decreasing the blood pressure during postural changes. The constellation of subjective symptoms in patients who often appear otherwise perfectly healthy plus a negative work-up often results in delayed or missed diagnosis of POTS, while symptoms can be severe and frequently debilitating. We advise clinicians to consider POTS early in work-up of vague subjective symptoms in otherwise healthy-appearing individuals so that diagnosis is not delayed and morbidity due to POTS is reduced.
Abstract #61: A RARE CAUSE OF ACUTE CORONARY SYNDROME: CORONARY VASOSPASM IN REFRAC TORY CARCINOID SYNDROME.

Dr. Tyler Gutschenritter - Department of Internal Medicine, University of Oklahoma School of Community Medicine
Dr. Manju Mathew - Department of Internal Medicine, University of Oklahoma School of Community Medicine, Tulsa, OK
Dr. Martina Jelley - OU College of Medicine

INTRODUCTION: Carcinoid tumors are a rare type of malignancy defined as non-pancreatic neuroendocrine tumors that most commonly arise in the gastrointestinal tract (70%) and respiratory tract (25%). The incidence of carcinoid tumors in the United States is 4.7 per 100,000 people which amounts to approximately 15,000 new diagnoses each year based on the current United States population. Carcinoid syndrome is the classically associated paraneoplastic syndrome consisting of secretory diarrhea, flushing, bronchoconstriction and hemodynamic instability. This dreaded syndrome occurs in less than 10% of patients with carcinoid tumors and is caused by the release of vasoactive molecules by the tumor - namely serotonin, histamine, kallikrein, and prostaglandins. Carcinoid syndrome is most commonly seen in cases of hepatic metastases but can also be seen in primary bronchus tumors. An unusual complication of carcinoid syndrome is coronary vasospasm mediated by serotonin and histamine binding to endothelial receptors on coronary arteries.

CASE REPORT: Herein, we present a case of a 48-year-old woman with primary bronchus carcinoid tumor and innumerable hepatic metastasis with carcinoid syndrome refractory to octreotide. She developed angina and ST-segment elevation and was rushed to emergent angiography. Initially, she appeared to have severe, diffuse coronary atherosclerotic disease. However, after intracoronary nitroglycerin, vasospasm resolved and only mild atherosclerotic disease was noted. Subsequently, ST-segment elevations and angina resolved, and post-procedure troponin was negative. She was started on oral isosorbide mononitrate and diltiazem and remained without recurrence of angina throughout her hospitalization.

CONCLUSION: Coronary vasospasm caused by carcinoid syndrome should be treated with nitroglycerin, calcium channel blockers, and octreotide. In refractory cases, percutaneous coronary intervention with stenting and/or balloon angioplasty in severely diseased vessels can provide a durable resolution of angina. Ultimately, ablation and/or resection of malignancy are the best means to prevent recurrence of this life-threatening event.
Abstract #70: HEPATITIS C ASSOCIATED MEMBRANOUS NEPHROPATHY: A POSSIBLE KEY TO UNLOCKING NEPHROTIC SYNDROME?

Dr. Christopher Girgis - University of Oklahoma Nephrology & Hypertension, Department of Internal Medicine, Division of Nephrology & Hypertension
Dr. Krishna Baradhi - OU-Tulsa Department of Internal Medicine

INTRODUCTION: Membranous Nephropathy (MN) is typically associated with malignancy, infections, and idiopathic. Though the association with Hepatitis C (HCV) and MN has been debated, there is growing amount of case reports in the medical literature to suggest this connection.

CASE REPORT: We present the case of a 54 year old white male with history of hypertension, pulmonary embolism, smoking and newly diagnosed HCV who presented with anasarca and shortness of breath. Urinalysis revealed significant proteinuria without hematuria. He was found to have an albumin of 1.8 and 22 grams of proteinuria on a 24 hour collection. Creatinine was 1.42 mg/dL on admission. Approximately 4 months prior, there was 9 grams of proteinuria and creatinine was 0.98 mg/dL. He had been started on IV diuretics and nephrology was consulted.

Serological workup was performed and returned negative including lupus panel, cryoglobulin and HIV. The patient did not have diabetes mellitus. Renal biopsy was performed and diagnosed with Grade II Membranous Nephropathy with negative PLA2R staining. Given these findings, a diagnosis of MN associated with HCV was made.

The patient’s creatinine remained stable around 1.8 mg/dL. He was treated with a statin, Vitamin D replacement, and an ACE inhibitor. It was suspected that his previous pulmonary embolus was associated with the membranous nephropathy. The patient was discharged with gastroenterology follow-up for treatment of Hepatitis C for hopeful resolving of the membranous nephropathy.

DISCUSSION: Approximately 3% of the world population is infected with HCV. Membranoproliferative glomerulonephritis is most common pattern associated with HCV. Other glomerular entities associated with HCV, include focal segmental glomerulosclerosis, MN, postinfectious glomerulonephritis, IgA nephropathy, and fibrillary or immunotactoid glomerulopathy.

Though still disputed as a direct cause, growing number of cases indicate strong association and further research must be emphasized on the mechanism of this virus at the glomerulus to which it causes this degree of proteinuria. Around 8.3 % of MN patients were HCV positive.

The pathogenesis of MN in these patients may be related to the deposition of immune complexes containing HCV proteins in glomeruli.

It is unknown how exactly Hepatitis C initiates at the glomerulus whether glomerulonephritis or podocytopathy. If future research can determine why certain processes only allow red blood cells as opposed to only albumin, these entities, through study of Hepatitis C, can provide the key to that question.
Abstract #73: FANCONI’S SYNDROME & HYPOMAGNESEMIA: AN OVERLOOKED ASSOCIATION OR DIAGNOSTIC ENTITY?

Dr. Christopher Girgis - The University of Oklahoma - Tulsa
Dr. Pranay Kathuria - The University of Oklahoma – Tulsa

INTRODUCTION: Fanconi’s Syndrome is associated with hypophosphatemia, aminoaciduria, and renal glycosuria. However, there is significant variability in the phenotypical presentation of this disease process. Affecting the proximal convoluted tubule, this disease presents with the typical features of a classical Type II Renal Tubular Acidosis.

Time to diagnosis and length of underlying etiologies such as multiple myeloma or medications can play a role in the presentation, specifically between acquired and congenital Fanconi’s Syndrome.

Though typically not considered a classical association with Fanconi’s Syndrome, hypomagnesemia is occasionally noted in the literature in association with this disease and seems to be an underrecognized feature of this entity.

CASE REPORT: We present the case of a 65 year old female with history of recently diagnosed multiple myeloma (2 months prior), hypertension, and previously treated hypercalcemia now hypocalcemic who presented with carpo-pedal spasms. She had been treated approximately one month prior with cyclophosphamide, bortezomib, dexamethasone, and denosumab.

Corrected calcium was 6.2 mg/dL, bicarbonate 16 mEq/L, potassium 2.4 mEq/L, chloride 112 mEq/L, magnesium 1.3 mEq/L, phosphorus 1.3 mg/dL, anion gap 15, and creatinine 1.42 mg/dL with acute kidney injury with a baseline of 0.6 mg/dL.

Urine bicarbonate was 8 in the setting of acidosis (typically 0 in acidosis). Fractional excretion of magnesium was 28% in the setting of hypomagnesemia. Urine anion gap was 20, pH of the urine 8.0. There was no glucosuria. Trans-tubular potassium gradient was 4.75 indicating potassium losses in the setting of hypokalemia. Urine amino acids of aspartic acid, cystine, glutamic acid, glycine, phenylalanine, proline, serine, and valine were elevated indicating aminoaciduria.

Considering the above clinical findings, the diagnosis of Fanconi’s Syndrome, Renal Tubular Acidosis Type II in association with Multiple Myeloma was made. The patient was placed on oral replacements of electrolytes and started on Amiloride, with stabilization of electrolytes.

DISCUSSION: Though this is not classically noted as an association with Fanconi’s Syndrome, such as glucosuria, aminoaciduria, and hypophosphatemia, it appears to be an under-recognized feature of this disease process. As stated in the limited literature with this association, there is cellular injury at the nephron primarily at the proximal tubular cells impairing passive reabsorption of magnesium in Fanconi’s Syndrome. Underscoring this electrolyte disorder of this syndrome may better allow future clinicians to recognize hypomagnesemia in the setting of a non-anion gap metabolic acidosis and perhaps be considered as a diagnostic entity.
**Abstract #78: MELANOMA, MYASTHENIA GRAVIS AND A MONOClonAL ANTIBOdy**

Dr. Kory Drake - OU Tulsa School of Community Medicine  
Dr. Amy Wilson - OU Tulsa School of Community Medicine  
Dr. Kevin Smith - OU Tulsa School of Community Medicine  
Dr. Summer Lepley - OU Tulsa School of Community Medicine  
Dr. Kacey McConnell - OU Tulsa School of Community Medicine  
Dr. Bernadette Miller - OU Tulsa School of Community Medicine

**INTRODUCTION:** Nivolumab is an immune checkpoint inhibitor that is used to treat multiple advanced malignancies. It is associated with several adverse effects, including hepatitis, pneumonitis, acute renal failure, endocrine disorders, intestinal perforation, and other immune-related adverse events. Here, we describe the case of a 74-year-old man with metastatic melanoma who developed myasthenia gravis (MG) after starting nivolumab.

**CASE REPORT:** The patient was a 74-year-old male who originally presented to the hospital from his oncologist’s office due to diplopia, ptosis, bilateral lower extremity weakness, and autoimmune hepatitis (AST 203 and ALT 281). He had metastatic melanoma to his lungs and was treated with nivolumab, a PD-1 inhibitor, one month prior. His acetylcholine receptor (binding and blocking) and MuSK antibodies were negative suggesting medication induced over idiopathic MG. He was found to have a troponin of 3.45, which cardiology determined to not be due to coronary artery disease. and CPK 917. He was treated for myasthenic crisis with plasma exchange, high dose steroids, and mycophenolate mofetil after which his strength, oculomotor symptoms, negative inspiratory forces and forced vital capacities improved. His concurrent immune-mediated myocarditis, myositis, and hepatitis resolved with glucocorticoid therapy. After two weeks of hospitalization he was discharged with steroids, mycophenolate mofetil, and pyridostigmine. Upon discharge he had issues with his insurance, preventing him from filling the mycophenolate mofetil. One week after discharge he developed abdominal pain, increasing weakness, and shortness of breath. He came back to the hospital where he was found to have a large amount of intraperitoneal free air thought to be due to perforated diverticulitis with a multilobulated pelvic abscess and severe sepsis. He required delayed extubation after surgery due to myasthenic crisis. He ultimately required reintubation and developed an upper GI bleed that required interventional radiology to perform an embolization of the gastroduodenal and left gastric arteries. His family decided to place him on comfort measures and he was compassionately extubated and passed shortly afterwards.

**DISCUSSION:** This patient presenting with diplopia, dysphagia and worsening neuromuscular respiratory failure in the setting of recent nivolumab administration was compatible with an immune-mediated myasthenic crisis which occurs as a complication of this medication in 1% of cases. This case scored a 7 on the Naranjo algorithm suggesting a probable likelihood of this being attributed to an adverse drug reaction. We advise clinicians to consider this rare complication of nivolumab treatment in patients who demonstrate symptoms of myasthenia gravis.
Abstract #80: A SILENT KILLER: A POST-MYOCARDIAL INFARCTION COMPLICATION

Dr. Shahnawaz Ijaz - University of Oklahoma School of Community Medicine - Dept of Internal Medicine
Dr. Amritanshu Singh - University of Oklahoma School of Community Medicine - Dept of Internal Medicine
Dr. Rubin Thomas - University of Oklahoma School of Community Medicine - Dept of Internal Medicine

INTRODUCTION: A ventricular septal defect is an infrequent complication of STEMIs. They generally occur 3-7 days after the initial event and present with a holosystolic murmur, hemodynamic compromise, and new onset heart failure. They have a high mortality rate and require surgical repair.

We present a case of a patient who developed a VSD after having a silent MI and came in weeks after the event. On presentation she was hemodynamically stable.

CASE REPORT: The patient was a 66 year old female who presented with increased shortness of breath and swelling. Her symptoms started 2 weeks ago after she had initial flu like symptoms including malaise, fever, and chills. She reported chest pressure once, noticed shortness of breath when walking her dogs, “choking and gurgling” when laying down, and gaining 20 lbs. Her only chronic medical problem was type 2 diabetes not on insulin. She had no previous known heart disease.

She had bilateral swelling in her legs, distended neck veins, diminished sounds at the lung bases, and a new a loud holosystolic murmur. Her EKG was low voltage and revealed new Q waves in the inferior and lateral leads. Her chest xray revealed pulmonary congestion and bilateral pleural effusions. She had an elevated BNP and mildly elevated troponins.

Her vitals were stable, and she was on room air with a normal oxygen saturation. She was treated with intravenous diuresis overnight and anticoagulation for concern of acute coronary syndrome.

The following morning, her transthoracic echocardiogram read a moderate sized VSD and small apical aneurysm. A cardiac catheterization was performed which revealed significant disease in her left anterior descending artery and left circumflex Artery.

She subsequently underwent surgery to re-vascularize the heart, fix the septal defect and resect the aneurysm. The patient did well post operation and was discharged from the hospital to home with home health.

DISCUSSION: The case describes a serious complication after a myocardial infarction and is life threatening. However, the patient arrived to the emergency room, weeks after her likely infarction, with stable vitals. It is important to recognize that not all patients with myocardial infarction present with acute symptoms, and it is unusual that the patient survived so long out after her initial infarction.
Abstract #84: DAPTOMYCIN INDUCED ACUTE INTERSTITIAL NEPHRITIS (AIN): A NEW MEMBER TO THE AIN MEDICATION FAMILY?

Dr. Audrey Harris - OU Tulsa School of Community Medicine
Dr. Christopher Girgis - OU Tulsa School of Community Medicine
Dr. Narrotam Regmi – ou

INTRODUCTION: Acute interstitial nephritis is a relatively common clinical entity encountered. It can be difficult to ascertain the exact cause when multiple medications are administered during the same clinical timeframe. However, after thorough review of the patient’s history, notes and laboratory values, the diagnosis of daptomycin induced acute interstitial nephritis was made.

CASE REPORT: We present the case of a 62 year old female with back pain due to a previous spinal surgery, found to have coagulase negative staphylococcus bacteremia due to an epidural abscess. Vancomycin was started and underwent lumbar wound washout with debridement. With a minimum inhibitory concentration of less than two, vancomycin was discontinued. The patient was on a proton pump inhibitor during most of the admission until discharge.

Infectious disease began Daptomycin and within 24 hours, the patient developed a diffuse erythematous rash throughout the body with creatinine rising from 2.1 to 2.4 mg/dL in the course of three days. Minimal eosinophilia of .30 was noted. Meropenem was started with Creatinine down-trending to 1.41 in the course of 12 days with the rash waxing and wanin during that time. With waxing and waning of the rash, Meropenem was stopped and Daptomycin was given again 13 days after initial administration.

With a second exposure of Daptomycin, the patient’s Creatinine increased from 1.41 to 3.81 in 6 days with a worsening of the rash. Eosinophilia increased 6% to 28% in that time with no evidence of urine eosinophils on multiple occasions and occasional WBCs in the urine with minimal proteinuria and no hematuria.

With suspicion for acute interstitial nephritis with no improvement of renal function, the patient underwent renal biopsy which revealed acute interstitial nephritis with prominent lymphoeosinophilic infiltrate. Prednisone 60 mg by mouth daily was started with rapid improvement of renal function with Creatinine down to 0.9 mg/dL and rash resolved. Linezolid was started with no side effects reported.

DISCUSSION: Daptomycin is typically not considered a cause of acute interstitial nephritis. However, given the timeline of the rash and decline in kidney function, it raises the question if it should be considered. Just as the first cases of PPI induced AIN emerged when clinicians began to recognize subsequent cases, consideration should be taken for other drugs like daptomycin to be identified as clinically significant causes of AIN. If this association becomes more common, clinicians should be made aware so as not to overlook a cause of AIN.
Abstract #85: ANTIFREEZE IN THE EMERGENCY DEPARTMENT – RAPID MANAGEMENT SAVES KIDNEYS

Dr. Jessica Brown - University of Oklahoma
Dr. Christopher Girgis - The University of Oklahoma - Tulsa
Dr. Narottam Regmi - University of Oklahoma School of Community Medicine - Department of Nephrology

INTRODUCTION: Ethylene glycol is a relatively uncommon encounter that some physicians will face throughout their career. Though this is a reasonably simple protocol consisting of medications and possible hemodialysis, rapid recognition of the toxin and quick interpretation of labs are essential. To ensure that these processes occur smoothly and with organization is crucial to avoid death.

CASE REPORT: We present the case of a 54 year old male with no significant past medical history who was found down at his home. He had a fight with family the night prior, during which he threatened to drink antifreeze. He was last seen around midnight and found in the morning unconscious.

With rapid management in the ED, the patient’s urine was tested with a Wood’s Lamp and found to be fluorescent in comparison to a normal urine sample. Volatile panel were sent, although results were not expected to return rapidly. He was found to have a pH of 6.85 with a bicarbonate of 7. There was an osmolal gap of 34 and an anion gap of 26. Vitals were stable. The patient had been intubated on the field and was obtunded and non-responsive without sedation.

Nephrology was consulted and hemodialysis was started within the hour along with Fomepizole administration. Urine was sampled by nephrology and evaluated under microscopy. The classic finding of significant amounts of hippuric acid crystals were seen under the microscope. The patient awakened during the first 2 hours of hemodialysis. High intensity dialysis was performed with blood flow rate at 400 ml/min and dialysate flow rate at 800 ml/min.

The patient was awakened fully the next day and extubated. His renal function and urine output declined within 48 hours, requiring intermittent hemodialysis. However, because of the swift initiation of treatment provided, the patient’s renal function began to improve and no longer required renal replacement therapy upon discharge.

DISCUSSION: Though often regarded as classic textbook knowledge, rapid management of ethylene glycol poisoning is an intricate process that demands fast and accurate recognition. The Emergency Department’s accurate history, availability of Wood’s Lamp, use of microscopy, and rapid initiation of hemodialysis were all factors that came together promptly to save our patient’s life and kidneys.
Abstract #88: EXTREME MEDICAL COMPLICATIONS OF STRICTER OPIOID PRESCRIPTION LAWS
Dr. Jack Test - University of Oklahoma-Tulsa, School of Community Medicine, Department of Internal Medicine
Dr. Jabraan Pasha - University of Oklahoma-Tulsa, School of Community Medicine, Department of Internal Medicine

INTRODUCTION: The opioid epidemic is a current subject of intense debate amongst healthcare professionals and policy makers. Recent policy initiatives have attempted to decrease opiate-related deaths via accountability measures for over-prescribing, compulsory utilization of prescription drug monitoring programs (PDMP’s), and limits on opiate narcotic prescriptions.

CASE REPORT: This case, demonstrates the possible negative effects of reactionary, albeit appropriately zealous, intervention by policymakers regulating opioid prescriptions. A 43-year-old male veteran who served in Afghanistan in the early 2000s sustained a spine injury and was treated with opioid analgesics until the middle 2010’s when his provider stopped prescribing them due to stricter opioid laws. He turned to IV heroin to treat his pain as a result. He presented to an emergency department for one week of worsening weakness, chills, nausea, nonbloody vomiting, and left side abdominal pain. He was admitted for severe sepsis requiring pressor support and supplemental oxygen diagnosed with infective endocarditis of his tricuspid valve and systemic sequelae including multiple septic pulmonary emboli with focal cavitation, a loculated left pleural effusion, MRSA bacteremia, left endogenous endophthalmitis, large left subcutaneous abscess of the chest wall involving the left pectoralis musculature, clavicle, and sternoclavicular joint, and bilateral upper extremity venous thromboembolisms. He underwent injection of antibiotics into the left eye and prolonged topical application of antibiotics. An ultrasound-guided thoracentesis was performed for the left pleural effusion. On his first readmission (after a course of antibiotics), he began therapeutic Eliquis for his thromboembolisms. His care was complicated by at least one drug abuse relapse with the patient admitting to heroin and methamphetamine use the day before an admission. To date, the patient has required four prolonged inpatient stays including the initial ICU admission, two six week rounds of IV vancomycin and one six week treatment with oral doxycycline for MRSA bacteremia. Three operative interventions for incision and drainage of his left chest wall abscess have been performed due to wound care nonadherence and poor wound healing, requiring removal of the medial third of the left clavicle.

DISCUSSION: During policy negotiations concerning compulsory PDMP utilization in Oklahoma, concerns were raised by the reported increase in heroin overdoses in states where utilization of the PDMP was made mandatory. Whereas, stricter opioid prescribing laws have reduced opioid-related deaths overall, policy makers and medical professionals must recognize that limiting appropriate access to pain medications can lead to severe and expensive medical complications due to increased heroin abuse.
Abstract #96: A PEDIATRIC ILLNESS IN THE ADULT : A CASE OF MINIMAL CHANGE DISEASE

Dr. Andy Nguyen - Department of Internal Medicine, University of Oklahoma School of Community Medicine, Tulsa, OK
Dr. Kevin McGinn - Department of Internal Medicine, University of Oklahoma School of Community Medicine, Tulsa, OK
Dr. Shahnawaz Ijaz - Department of Internal Medicine, University of Oklahoma School of Community Medicine, Tulsa, OK
Dr. Krishna Baradhi - OU-Tulsa Department of Internal Medicine

INTRODUCTION: Nephrotic syndrome is defined by the clinical triad of edema, proteinuria (>3.5g/24hrs), and hypoalbuminemia (<30g/dl). Minimal change disease (MCD) is recognized as the predominant cause of nephrotic syndrome in children, accounting for approximately 90% of cases among children under age 10. Less commonly, it accounts for 10-15% of cases of nephrotic syndrome in adults, in whom membranous nephropathy and focal segmental glomerulosclerosis (FSGS) are the most frequent culprits. Typical presentation is characterized by the sudden onset - over days to one to two weeks - of signs and symptoms of nephrotic syndrome, including the aforementioned triad as well as hyperlipidemia and hypercoagulability.

CASE REPORT: A 32-year-old male with past medical history of hypothyroidism and schizophrenia presented for a three-week history of worsening anasarca accompanied by muscle aches and abdominal tenderness. The patient recently returned to his strenuous occupation as a welder following a motorcycle collision, and had been self-medicating with an excessive amount of ibuprofen. Urinalysis demonstrated 3+ protein and hyaline casts on microscopy consistent with nephrotic syndrome. The patient had no previous history of hypertension, diabetes, or arthritis, and denied any skin eruptions, oral ulcerations, known hepatitis, or IVDU. Labwork was performed to assess for etiology of the new onset nephrotic syndrome while the patient was treated in the interim with ACE inhibitor, statin, and diuresis. A1C was found to be 5.1%. HIV, RPR, ANA, GBM Ab, ANCA, and hepatitis A, B, and C panels were all found to be negative. C3 and C4 levels were found to be within normal limits. Renal biopsy demonstrated minimal change nephropathy with the classic finding of effacement of the podocyte foot processes. Given history and workup, etiology was attributed to the patient’s recent significant use of NSAIDs. With confirmation of diagnosis, patient was initiated on oral prednisone in conjunction with continuing ACE inhibitor, statin, and loop diuretic, and discharged after appropriate improvement in clinical status and labwork.

DISCUSSION: Despite its reputation as a pediatric disease, MCD is also the 3rd most common cause of nephrotic syndrome in adults and should be on the differential when evaluating such adult cases. Perhaps the most notable distinction differentiating MCD is onset, with the nephrotic symptoms of MCD occurring over days to weeks as compared to a more gradual presentation over weeks to months, reflecting likely underlying etiologies. While most cases are idiopathic, MCD has been associated with medications, neoplasms, infections, allergens, and other glomerular diseases.
Medicine-Pediatrics
Abstract #77: CHOKING ON A BONE: WHEN METAPLASIA GOES BAD
Dr. Shawn Price - OU Tulsa School of Community Medicine
Dr. Nicholas Peluso - St John Medical Center - Tulsa, OK

INTRODUCTION: Osseous metaplasia is a common condition in which metaplastic bone is formed directly from connective tissue as a result of alternative differentiation of fibroblastic cells, typically secondary trauma, burns, neurologic injuries, or major orthopedic surgeries. This case describes an atypical presentation and location for osseous metaplasia.

CASE REPORT: A 82 year old male presented to the emergency department (ED) with shortness of breath and productive cough that had started 3 days prior. In the ED he was given an hour long albuterol/atrovent treatment, solumedrol, nitroglycerin, and Lasix, however he rapidly progressed to respiratory failure and was transferred to the intensive care unit. On presentation to the ICU, patient initially tolerated BiPap, however quickly required intubation due to declining respiratory function. Intubation was complicated by a small airway (requiring reduction in ET tube size) and apparent laryngeal mass. However, subsequent CT was unremarkable for any soft tissue neck mass. Patient was extubated after a course of steroids, however developed stridor and hypoxia, resulting in re-intubation. Patient was then taken to OR by ENT for tracheostomy placement and global edema of upper aerodigestive tract, including the vocal cords. Biopsy revealed squamous mucosa with subepithelial seromucinous glands, showing ulceration, acute inflammation, necrosis, and reactive changes, along with a focal fragment of bone representing osseous metaplasia. Patient tolerated trach placement well and was transferred to LTAC for further rehabilitation.

DISCUSSION: This case illustrates an uncommon presentation of a common condition. Traditionally, this condition affects striated muscle, tendons, ligaments, fasciae, and aponeuroses and spares myocardium, the diaphragm, tongue, larynx, smooth muscle, and sphincters. Although this condition is typically self-limited and will resolve with time, significant morbidity can require surgical intervention.
Abstract #27: POST-ABORTION NECROTIC CERVICAL MASS
Dr. Ashley Brown - University of Oklahoma-Tulsa, School of Community Medicine, Department of Obstetrics & Gynecology
Dr. Clare Hinchey - University of Oklahoma-Tulsa, School of Community Medicine, Department of Obstetrics & Gynecology
Dr. John Ervin - University of Oklahoma-Tulsa, School of Community Medicine, Department of Obstetrics & Gynecology

INTRODUCTION: Retained products of conception can occur following management of an abortion, typically presenting as vaginal bleeding or infection several weeks after treatment.

CASE REPORT: A 37-year-old G2P1011 presented with heavy vaginal bleeding for the past 3 weeks. She reported a history of cervical conization in 2004. On exam, a 2x3cm blue-gray, spongy, friable mass was visible obscuring the cervix. CT showed a probable cervical mass extending into the endometrium and a 1.3cm nodule in the right lower lobe concerning for metastasis. With further investigation, it was discovered the patient had undergone a dilation and curettage for missed abortion 6 weeks prior. A urine pregnancy test was negative; however β-hCG was 17.3. The patient was taken to the OR for an exam under anesthesia with biopsies. The frozen specimen revealed necrotic products of conception; a repeat suction dilation and curettage was performed to evacuate the uterus. Due to significant blood loss, the patient received a transfusion and was transferred to the ICU for observation. She was discharged on post-operative day two.

DISCUSSION: A delay in diagnosis occurred due to provider fixation on the history of cervical conization with abnormal CT. The patient was a poor-historian and initially reported her abortion was several months prior to presentation. However, upon further investigation of electronic medical records it was discovered the abortion was only 6 weeks prior. A β-hCG was obtained due to concern for gestational trophoblastic disease, as a false negative urine pregnancy test can occur with β-hCG >500,000.¹ Biopsy of the cervical mass was then performed and confirmed the diagnosis. Retained products of conception complicates <1% of first trimester pregnancy termination,² and usually presents with delayed heavy or persistent vaginal bleeding.³ This patient experienced recurrent episodes of heavy bleeding that would last for approximately 30 minutes and then cease for several days. Due to a delay in obtaining her accurate history of abortion, the treatment was also delayed. Retained products of conception should be promptly treated with repeat curettage or misoprostol.
Abstract #48: SIMULTANEOUS CYSTOSCOPY AND LAPAROSCOPY TO DELINEATE BLADDER BORDERS DURING HYSTERECTOMY

Dr. Jillian Lundie - University of Oklahoma-Tulsa, School of Community Medicine, Department of Obstetrics & Gynecology
Dr. John Ervin - University of Oklahoma-Tulsa, School of Community Medicine, Department of Obstetrics & Gynecology

INTRODUCTION: Bladder injury at the time of hysterectomy is a potentially serious and often avoidable cause of post-hysterectomy morbidity. Patients who have previously undergone pelvic surgery, including cesarean section, are at increased risk of bladder injury due to adhesions between the bladder and lower uterine segment. By utilizing simultaneous cystoscopy and laparoscopy, we hope to limit bladder injury by more clearly defining bladder borders while developing the bladder flap during hysterectomy.

CASE REPORT: The patient is a 39-year-old female who presented for planned laparoscopic-assisted vaginal hysterectomy with bilateral salpingoophorectomy. This patient previously had three cesarean deliveries, as well as an ovarian drilling procedure, and an operative hysteroscopy with dilation and curettage. Adhesions between the bladder and lower uterine segment were noted upon initial anatomic survey after placement of the first laparoscopic port. Omental adhesions were also noted on the anterior abdominal wall. When it came time to develop the bladder flap, the cystoscope was placed in the bladder. Development of the bladder flap proceeded with utilization of the harmonic scalpel device. Intermittently during the procedure, the light on the laparoscope was toggled on and off to allow for transillumination of the bladder by the cystoscope. Using this technique, bladder borders were readily identified, and the bladder flap was easily dissected while avoiding incidental cystotomy. The rest of the procedure proceeded with no complications. The patient was discharged home the same day after recovery in the post-anesthesia care unit.

DISCUSSION: The use of cystoscopy simultaneously with laparoscopy is a novel approach to a common issue: avoiding bladder injury. As the cesarean section rate in the United States is rising, navigating around post-surgical adhesions will continue to be an issue. Current practice involves utilization of cystoscopy after completion of hysterectomy to identify bladder injury by direct observation, and to identify ureteral injury by observing efflux at the ureteral orifices. Other techniques sometimes employed involve backfilling the bladder with sterile saline or sterile milk, or utilization of pre-procedure ultrasound to observe “peritoneal slide” and determine if adhesions are present. If we are able to limit bladder injury with this technique, then we might be able to offer minimally invasive surgery to more candidates.
Abstract #68: ANEMIA, ANTI-EPILEPTICS, AND AUTHORITATIVE BIAS
Ms. Kelsey Williams - University of Oklahoma School of Community Medicine
Prof. bobby bosse - University of Oklahoma School of Community Medicine

INTRODUCTION: There are several causes of error in medicine with one being bias in the minds of healthcare providers. Authoritative bias is the tendency to attribute greater accuracy to the opinion of an authority figure and be more influenced by that opinion.

CASE REPORT: 38-year-old G4P1122 female at 37 weeks gestation presented for labor induction secondary to uncontrolled grand mal seizure disorder. Medications prescribed include lacosamide, carbamazepine, topiramate, and lamotrigine. In addition, she had anxiety and depression. She delivered via vacuum-assisted vaginal delivery without complications. Shortly after delivery, the patient reported an unwitnessed seizure and an additional dose of antiepileptics were given. During rounds on postpartum day 1, she was lethargic and reported feeling dizzy and falling a few hours earlier. Physical examination was benign except for positive orthostatic vital signs. Laboratory results revealed Hgb of 7.3, and she was transfused for symptomatic anemia. Two hours later, nursing found the patient obtunded and a rapid response was called. On examination the patient had slurred speech, difficulty with word finding, psychomotor retardation, and agitation with an otherwise normal neurologic examination, EKG, and vital signs. Stat neurologic consult was ordered. Interview of the family revealed no recent seizures visualized and reports that they had never seen the patient act in this manner. The family added that the patient had poor medication compliance and typically took her antiepileptics at a lower dose and frequency than prescribed. Neurology consult included a brief physical exam and the opinion that behavior was psychiatric in nature. The neurologist was informed regarding the patient’s poor medication compliance. It was felt that medication overdosing was unlikely since the patient was under the care of an outpatient neurologist, and a psychiatric consultation was recommended. Ultimately the patient’s family became very concerned for overdose and refused any further antiepileptics for the patient despite encouragement by medical providers. Later during the hospital course, carbamazepine was found to be at toxic levels. The patient recovered within 24 hours, and the remaining hospital course was uneventful.

DISCUSSION: Although specialty consultation leads to improved knowledge and medical care, at times it can create bias, and the authoritative nature can be difficult to surpass. It is crucial that providers be aware that authoritative bias exists, to avoid its pitfalls, and find ways to decrease error in clinical decision making. Despite the recommendation for psychiatric referral, drug-drug interactions and drug levels should have been given more consideration.
Abstract #4: ADRENOCORTICAL CARCINOMA: AN UNCOMMON PEDIATRIC DIAGNOSIS WITH A COMMON PEDIATRIC CHIEF COMPLAINT

Dr. Christina Benjamin - University of Oklahoma-Tulsa, School of Community Medicine, Department of Pediatrics
Dr. Alyson Zulfer - University of Oklahoma-Tulsa, School of Community Medicine, Department of Pediatrics
Dr. Gregory Kirkpatrick - St. Jude Affiliate Clinic at The Children's Hospital at Saint Francis

INTRODUCTION: Adrenocortical carcinoma is an exceedingly rare cause of childhood cancer. In the pediatric population, a majority of these tumors are functioning, which results in patients that present with symptoms directly related to the overproduction of sex hormones, cortisol, and/or aldosterone. Frequently, intra-abdominal tumors such as these present as abdominal fullness, constipation, and abdominal distension, which are common pediatric complaints in benign conditions and may present a diagnostic challenge for pediatricians.

CASE REPORT: A 2 year old male, with history of constipation presented with abdominal distension, constipation, and emesis. Despite this patient’s long-standing history of constipation, a thorough history and physical examination was performed in the emergency department. On physical exam, he was found to have a palpable left-sided abdominal mass. A genitourinary exam was significant for testicular and phallic enlargement with stage II pubic hair. Labs demonstrated microcytic anemia and elevated lactic acid dehydrogenase. An ultrasound revealed bilateral renal masses, while CT of the abdomen revealed bilateral retroperitoneal masses. Testosterone level was elevated, without elevated corticosterone or aldosterone, suggesting possible adrenocortical carcinoma. PET scan demonstrated no distant metastasis or lymph node involvement. The patient underwent tumor biopsy with pathology report confirming the diagnosis of adrenocortical carcinoma. The patient was started on a Children’s Oncology Group (COG) study for the treatment of adrenocortical tumors, utilizing surgery with lymph node dissection and multi-agent chemotherapy. The patient was able to be treated effectively and in a timely manner due to the thoroughness of the medical professional on initial presentation.

DISCUSSION: Adrenocortical carcinoma is a rare cause of childhood cancer. In the pediatric population, the majority of these tumors are functioning and thus, identification of signs and symptoms consistent with hormone over-production can be crucial in diagnosis. In this case, the evidence of abdominal mass and virilization on examination allowed for appropriate diagnostic testing to be initiated. Labs obtained during hospitalization demonstrated an elevated testosterone level, consistent with his virilization on exam, which allowed the diagnosis of adrenocortical carcinoma to be made. It is essential for medical providers to obtain a careful history and perform a detailed physical exam, including a genitourinary exam, even if the presenting complaint is as common as constipation. Early diagnosis can lead to survival rates as high as 85% in this population of patients.
Abstract #7: INTRA-ARTERIAL THERAPY FOR CEREBRAL VASOSPASM IN A PEDIATRIC PATIENT WITH STREPTOCOCCAL MENINGITIS

Dr. Christina Benjamin - University of Oklahoma-Tulsa, School of Community Medicine, Department of Pediatrics
Dr. Lindsay Stafford - University of Oklahoma-Tulsa, School of Community Medicine, Department of Pediatrics
Dr. Kamna Jaiswal - The Children's Hospital at Saint Francis, Pediatric Intensive Care

INTRODUCTION: Cerebral arterial vasospasm in the setting of bacterial meningitis is a rare finding in the adult population, and rarer in pediatrics. Its treatment has been reported in adults, most frequently in the setting of adult subarachnoid hemorrhage, while such data is lacking in pediatrics. We describe the case of a 9-year-old-boy with left-sided hemiplegia due to middle cerebral artery vasospasm resulting from Group A streptococcal meningitis in setting of Influenza A infection, which was managed with intra-arterial (IA) vasodilatory therapies with clinical improvement.

CASE REPORT: A 9 year old male with past medical history of viral meningitis at 10 weeks of age and recent diagnosis of Influenza A presented with clinical symptoms of meningitis. Work-up was significant for cerebrospinal fluid pleocytosis. Head CT was negative. Patient was admitted to the pediatric intensive care unit and initiated on Tamiflu, ceftriaxone, and vancomycin. Blood, throat, and CSF cultures grew Group A streptococcus. The following morning, patient developed acute flaccid left hemiplegia. Magnetic resonance imaging revealed meningeal thickening and enhancement. CT angiography and magnetic resonance angiography showed decreased middle cerebral artery vessel caliber, concerning for cerebral vasospasm. Magnetic resonance venogram was concerning for old thrombus and associated scarring due to occlusion of right transverse sinus. He was taken urgently for cerebral angiography, where cerebral vasospasm of the M1 and M3 segments of the middle cerebral artery were noted; no thrombus was seen. IA injections of verapamil and milrinone were implemented with improved vascular filling. We maintained high-normal blood pressure, hypervolemia, and hyperperfusion (triple H therapy) in combination with nimodipine, steroids and anticoagulation. Over the next 48-72 hours, patient’s clinical symptoms continued to improve. Our patient did not have full recovery of left-sided function at discharge but he did have significant improvement from initial insult.

DISCUSSION: There are no reported cases of IA vasodilatory therapy in pediatric cerebral vasospasm. The use of nimodipine and triple H therapy alone, without IA administration of vasodilators, has previously been reported without any improvement in the patient condition. In the absence of more data and research, it is difficult to determine whether these therapies contributed to recovery or if the patient would have demonstrated improvement nonetheless. Despite this, the clinical and radiographic improvement in our patient does suggest a role for the above-mentioned IA therapies in management of arterial vasospasm in the setting of meningitis; thus managing a clinically significant reversible cause of neurologic deficit.
Abstract #8: SPASMUS NUTANS: A CASE REPORT
Mr. Mohsain Gill - College of Medicine, University of Oklahoma School of Community Medicine
Dr. Michelle Escala - Department of Pediatrics, University of Oklahoma School of Community Medicine

INTRODUCTION: Spasmus Nutans is a rare ophthalmologic syndrome occurring in early childhood. It consists of a triad of nystagmus, head nodding, and torticollis. Neuroimaging can help distinguish the syndrome from underlying brain malignancies, which have significant morbidity and mortality.

CASE REPORT: A 9-month-old male presented for his well child check as a new patient. His mother was concerned about abnormal head and eye movements for the last three months. On physical exam the patient was noted to have persistent head nodding and horizontal nystagmus which was more noticeable when holding the patient’s head still. A complete history and physical revealed only maternal hypertension, with a normal pregnancy and no substance abuse; however, paternal history of head nodding was discovered. The child displayed all appropriate growth milestones at 50th percentile for height, weight, and head circumference. The child was referred to pediatric ophthalmology, examination showed no ocular findings with central maintained vision in each eye and confirmed the presence of nystagmus. Magnetic resonance imaging (MRI) of the head was also ordered, showing no evidence of tumor or neurological disease in the child.

DISCUSSION: The precise incidence and prevalence of Spasmus Nutans is unknown, but it’s considered rare. The cause of the nystagmus also remains unknown. The disconjugate nature of the nystagmus suggests a yoking abnormality whose anatomic location may lie at the level of the ocular motor nuclei and may be caused by a delayed developmental change in the associated connections within this system. Thus, the MRI was ordered to rule out an underlying malignancy. The head nodding is not thought to be pathological, but rather a voluntarily neurovisual adaptation to compensate for nystagmus. The head nodding disappears during sleep and becomes more prominent when the child inspects an item of interest.

The prognosis for visual function is excellent and the syndrome is often self-limiting. A long-term follow up study observed 10 patients over a mean of 5.5 years and concluded that all 10 subjects had vision better than 20/50. Additionally, 90% of patients had 20/30 vision or better in at least 1 eye, and orthotropia with normal stereovision will likely develop in approximately one-third of these patients. Patients should be followed by ophthalmologist.

In conclusion, a rare ocular manifestation has been described. The pathogenesis of this syndrome is still unknown. We hope that this report will stimulate further clinical and epidemiologic evaluation of children with unusual head and eye movements.
Abstract #10: ZELLWEGEGER SYNDROME: CASE REPORT AND A CASE FOR PEDIATRIC HOSPICE

Ms. Chelsea McKenzie - University of Oklahoma-Tulsa, School of Community Medicine, Department of Pediatrics
Dr. Rachel Kaminski - University of Oklahoma-Tulsa, School of Community Medicine, Section of Internal Medicine/Pediatrics
Dr. Janitzio Guzman - University of Oklahoma-Tulsa, School of Community Medicine, Section of Internal Medicine/Pediatrics
Dr. Laura Campion - University of Oklahoma-Tulsa, School of Community Medicine, Department of Pediatrics

INTRODUCTION: Zellweger syndrome (ZS), the most severe manifestation of the cerebrohepatorenal syndrome spectrum, is a rare autosomal recessive systemic disorder, associated with abnormalities in the PEX1 gene resulting in very long-chain fatty acid accumulation. They produce significant dysmorphic, neurologic, ocular, and hepatic abnormalities from birth with a uniformly fatal course; treatment is symptomatic and supportive. Affected infants rarely survive beyond 6 months. Patients with ZS would benefit from early pediatric palliative care (PPC) consultation to ensure they receive the highest-quality, most compassionate care possible while meeting their family’s goals of care. PPC is, however, not readily available at many centers.

CASE REPORT: We present the case of a 4-month-old female born vaginally at 36 weeks gestation who underwent evaluation for hypotonia and syndromic features. She was previously seen at 3 months of age for seizure-like activity; evaluation was concerning for inherited metabolic disorders. Testing for common metabolic disorders and peroxisomal disorders was performed, and the child was discharged on antiepileptic therapy.

Three weeks following discharge, parents noted increasing seizure frequency and work of breathing. She was admitted for status epilepticus with subsequent hypersrrhythmia on EEG. Despite aggressive treatment, she had worsening respiratory distress with apnea and seizures. Peroxisomal disorder testing returned during this admission, demonstrating heterozygous status for two pathogenic PEX1 variants.

Throughout her final admission, the primary team engaged her parents in conversations about goals of care. The parents had misgivings about comfort care and hospice, believing these represented a total withdrawal of care. After extensive education, they opted for home hospice, desiring to maximize their infant’s comfort. Unfortunately, there was no local PPC, and an adult program coordinated care. The infant succumbed to her illness within one month of discharge.

DISCUSSION: Zellweger syndrome is a uniformly fatal phenotype and early diagnosis is imperative to allow the pediatric team to engage the child’s family in shared, informed decision-making. Discussions of PPC should start promptly. The integration of an interdisciplinary PPC team allows for more holistic and individualized care, improving quality of life and reducing suffering for patients and families. Unfortunately, approximately half of pediatric hospitals and rare adult hospice programs have PPC; thus less than three-quarters of children that qualify for PPC receive it. This case is an important reminder to consider rare pathologies when routine evaluation is inconclusive; the importance of frank conversations to reach mutually acceptable plans of care; and the need for expansion of PPC programs.
Abstract #15: A CASE OF ULCEROGLANDULAR TULAREMIA IN THE PEDIATRIC POPULATION

Dr. Fatima Angelica Ramirez-Cueva - The University of Oklahoma - Tulsa
Dr. Henoc Rodriguez - The University of Oklahoma - Tulsa
Dr. Melanie Mester - The University of Oklahoma - Tulsa
Dr. Kimberly Martin - The University of Oklahoma - Tulsa
Dr. Ama Karikari - OU-Tulsa Department of Pediatrics

INTRODUCTION: Tularemia, a highly infectious zoonotic disease caused by Francisella tularensis, is most common in the South Central US. It is transmitted by contact with an infected animal, via tick bite, inhalation of contaminated aerosols, or ingestion of contaminated water or meat. Multiple clinical manifestations of the disease exist with Ulceroglandular Tularemia characterized by a black scab (eschar) at the site of inoculation. Therefore, an initial high index of suspicion is needed for diagnosis.

CASE REPORT: We report the case of a 12 year old previously healthy female with a 10 day history of fever and left deltoid ulcer after tick bite who presented to the Emergency Department. Preliminary labs were remarkable for mildly elevated serum creatinine and white blood cells. Erythrocyte Sedimentation Rate was 75 mm/hr and C-Reactive Protein was 1.72 mg/L, however no hyponatremia, transaminitis or thrombocytopenia were noted. Blood cultures and titers for Cytomegalovirus, Epstein Barr Virus, Rocky Mountain Spotted Fever, Ehrlichia, [MKC(1] and Tularemia were negative. However, due to high suspicion for tick borne illness, doxycycline was started. Secondary to persistent fevers and the appearance of the ulcer, gentamicin was added to treat Tularemia. Fever resolved after 2 days of gentamicin and ulceration improved with completion of gentamicin. Repeat Tularemia serology at 2 weeks, revealed positive titers.

DISCUSSION: Ulceroglandular tularemia is the most common manifestation of the infection. Once inoculated, a papule forms in 3 to 5 days, which becomes a black scab in 7 to 10 days before forming an ulcer. Organisms can be present in blood during the first two weeks of disease and in cutaneous lesions for as long as 1 month, if untreated. Diagnosis is most often by serologic testing; however, patients do not develop antibodies until 7 to 14 days of illness. For those with suspected disease and initial nondiagnostic titers, antibiotic therapy with gentamicin should be initiated as delayed treatment is associated with therapeutic failure. Severe infections can range from suppurative adenitis to fulminant septicemia and death if left untreated. Repeat titers should be obtained in 2 to 4 weeks to confirm diagnosis.

CONCLUSION: Ulceroglandular Tularemia typically presents with history of fever, skin ulceration and tick exposure. This initial presentation should create a high index of suspicion for Tularemia with prompt treatment with gentamicin. This case highlights the importance of obtaining a thorough history & physical and follow up during and after appropriate therapy.
Abstract #16: SPOROTRICHOSIS AS AN UNCOMMON MYCOTIC INFECTION IN CHILDHOOD

Dr. Emilie Larsen - The University of Oklahoma - Tulsa
Dr. Kimberly Martin - The University of Oklahoma – Tulsa

INTRODUCTION: Sporotrichosis is a mycotic infection caused by *Sporothrix schenckii*, a dimorphic fungus that has worldwide distribution but found mostly in tropical and sub-tropical climates. Although traditionally known as “rose gardener’s disease” the microorganism is isolated from many environmental sources including soil, decaying vegetation, plants, timber, hay, and moss. In humans, the fungus commonly causes cutaneous infection but pulmonary and disseminated infections are described. Cutaneous infection generally occurs following minor traumatic inoculation of the pathogen, such as a cut, scrape or prick from a rose thorn, although a history of trauma may be absent. Rarely, infection is associated with scratches or bites from animals, particularly cats. It is uncommon within the pediatric population, but there are reported cases among children.

CASE REPORT: We present a previously healthy, unimmunized 2-year-old female who was referred by her primary care provider (PCP) to the Pediatric Infectious Diseases clinic with a 2-month history of multiple ulcerated and nodular skin lesions to her right forearm with spread primarily on the volar aspect. Initial diagnoses considered by the PCP included impetigo, methicillin resistant Staphylococcus aureus infection (MRSA) and Bartonella henselae (Cat Scratch Disease) for which she was prescribed sulfamethoxazole/trimethoprim (Bactrim), azithromycin and amoxicillin/clavulanate. Minimal improvement was observed following incision and drainage of abscess with surgical debridement. Final result of wound culture confirmed *Sporothrix schenckii*. Mother denied any obvious trauma to the arm, but reported that family lives in a rural area of Oklahoma and patient frequently plays outside on a “dirt hill.” Animal exposure included a cat and dog although mother denied animal bites. A three to six month course of daily oral itraconazole was initiated and follow-up with Pediatric Infectious Diseases three weeks later showed improvement of her skin lesions.

DISCUSSION: Sporotrichosis should always be considered in patients with risk factors for exposure and signs and symptoms of infection, even children. As this case demonstrates, environmental contact, especially in rural portions of the United States, can place adults and children at risk for development of the infection. Primary and secondary lesions are typically nodular and develop along the lymphatic chain in a “sporotrichoid” pattern, frequently ulcerating. While this patient underwent surgical biopsy prior to referral, the clinical exam findings are often sufficient to diagnose the infection. If such findings are present on physical exam, sporotrichosis cannot be overlooked as a diagnosis despite its rare occurrence in children.
Abstract #17: THE USE OF 16S rRNA TO AID DIAGNOSIS IN CULTURE NEGATIVE INTRA-ABDOMINAL ABSCESS

Dr. Janitzio Guzman - Department of Pediatrics, Section of Internal Medicine/Pediatrics, University of Oklahoma School of Community Medicine, Tulsa, OK
Dr. Kimberly Martin - Department of Pediatrics, Division of Pediatric Infectious Disease, University of Oklahoma School of Community Medicine, Tulsa, OK

INTRODUCTION: Microbiological diagnostic technology has made significant advancements. Since the advent of molecular methods such as 16S rRNA sequencing, microorganism identification has become possible in “culture negative” disease or in processes where culture may otherwise fail to yield an organism. This technology can be a useful adjunct in the identification of pathogenic organisms, but may also detect non-pathogenic organisms.

CASE REPORT: We present an 11 year old previously healthy female admitted for abdominal pain and weight loss. She had right lower quadrant (RLQ) abdominal pain over the preceding two months, progressing to right hip pain at time of admission. Outpatient evaluation revealed erythrocyte sedimentation rate (ESR) of 120 mm/hr, prompting admission.

Exam was remarkable for RLQ abdominal and hip tenderness and edema. Laboratory evaluation revealed leukocytosis, anemia, thrombocytosis, elevated C-reactive protein and ESR. Given concern for possible septic arthritis versus osteomyelitis, MRI of the hip was obtained disclosing presence of an iliopsoas abscess. She was treated with empiric antibiotics, and CT-guided drainage was performed 3 days later. Cultures and stains were negative for organisms. She clinically improved and was discharged home to complete therapy.

The patient developed fever 2 days after discharge. Reevaluation demonstrated recollection of abscess; repeat drainage was performed. The fluid was again negative on culture and stain. 16S rRNA sequencing was performed and detected multiple gut microbes, with predominance of Streptococcus mitis and Saccharomyces cerevisiae. Given symptoms and imaging findings, testing for Crohn’s disease (CD) was performed. The patient underwent surgical exploration demonstrating diffuse inflammation and rectosigmoid fistula to the abscess. This was resected and debridement was performed, permitting pathologic diagnosis of CD. Following surgery, vancomycin and piperacillin-tazobactam were reinitiated, and the abscess resolved.

DISCUSSION: This case illustrates the common scenario of antimicrobial therapy before infectious sampling and subsequently negative cultures. In these and in cases where conventional culture cannot otherwise isolate pathogens, newer technologies are increasingly valuable tools in the identification of causative organisms. In this case, the use of 16s rRNA revealed a number of gut flora, including the unusual finding of S. cerevisiae (unlikely to be a pathogen). Evaluation found the presence of an enteric fistula and the diagnosis of CD in this young woman. 16S rRNA sequencing is a powerful tool to detect organisms, but may detect non-pathogens requiring careful interpretation of its results. When applied appropriately, it may offer diagnostic and therapeutic guidance in cases of culture-negative and pre-treated infectious diseases.
Abstract #22: CONGENITAL TEMPORAL TRANSCUTANEOUS SINUS TRACT LEADING TO AN EPIDURAL BRAIN ABSCESS
Dr. Laura Varney - The University of Oklahoma - Tulsa
Dr. J. Colin Carroll - The University of Oklahoma - Tulsa
Dr. Megan Woslager - The University of Oklahoma - Tulsa
Dr. Kimberly Martin - The University of Oklahoma – Tulsa

INTRODUCTION: Cutaneous sinus tracts are common congenital malformations that develop from the first and second pharyngeal arches. They are found most frequently in the cervicofacial region, and typically present as preauricular, lip, thyroglossal, or branchial pits. They are usually asymptomatic, but can become infected leading to abscess or cellulitis.

CASE REPORT: A 2-year-old female was born with a small pit on her right temple, approximately 1.5cm anterior to her right ear. The pit had drained clear fluid sporadically since birth. Two weeks prior to presentation, the pit stopped draining and the child developed intermittent right eye swelling, fever, fatigue, anorexia, and weight loss. She completed an outpatient course of amoxicillin/clavulanic acid for presumed periorbital cellulitis, but her symptoms continued to worsen. Upon presentation to the Emergency Department, the child met sepsis criteria with leukocytosis and elevated C-reactive protein. CT scan of the brain and orbit demonstrated orbital cellulitis along with a subperiosteal abscess with intracranial extension into the middle cranial fossa. Ceftriaxone and vancomycin were started for antimicrobial coverage. Neurosurgery and Oculo-plastics were consulted, and the child was taken for immediate craniotomy, orbitotomy, and surgical drainage of the abscess. A post-operative MRI was obtained, which showed resolution of the abscess, but confirmed a right temporal sinus tract extending from the skin surface to the right upper orbit. Blood culture grew coagulase-negative staphylococcus that was believed to be a contaminant. Pediatric Infectious Diseases was consulted, and the child was placed on vancomycin and meropenem. Repeat blood cultures showed no growth. Intra-operative cultures grew Streptococcus intermedius, a member of the Streptococcus anginosus group and a common brain abscess pathogen. The patient was discharged home with plans to complete a six week course of ceftriaxone. A follow-up CT scan was obtained one month following discharge, and showed a very small extra-axial fluid collection in the region of the previous epidural abscess, but no pathologic enhancement. The sinus tract was subsequently surgically resected by Oculo-plastics.

CONCLUSION: This case illustrates the potential for severe intracranial pathology with a congenital temporal cutaneous sinus tract. Most congenital cervicofacial pits will not be patent, and at worst may develop easily treated abscesses; however, it is important to recognize the possibility that the sinus tract may have a communication with the intracranial space. Early imaging and possible surgical resection is therefore recommended for all patients with cervicofacial pits that intermittently drain.
Abstract #26: UNCOMMON PEDIATRIC PRESENTATION OF DE NOVO FAMILIAL ADENOMATOUS POLYPOSIS

Mr. Mitchell McCain - University of Oklahoma-Tulsa, School of Community Medicine, Department of Pediatrics
Dr. Matthew Tandy - University of Oklahoma-Tulsa, School of Community Medicine, Department of Pediatrics

INTRODUCTION: Familial Adenomatous Polyposis (FAP) is an autosomal dominant cancer syndrome characterized by mutation in the APC gene. APC is a “gate-keeper” gene that influences progression to adenoma, and ultimately to carcinoma. Classic FAP results in hundreds to thousands of polyps in the colon and rectum, leading to colorectal carcinoma by 40-50 years of age, as well as extra-colonic manifestations including increased risk of malignancy in the upper gastrointestinal tract, thyroid, pancreas, and bones. The Gardner Syndrome subtype involves classic FAP lesions with associated osteoid osteomas, desmoid tumors, epithelial inclusion cysts, and/or supernumerary teeth. The incidence of FAP in the general population is between 2 and 3 per 100,000 with a mean age of initial diagnosis of 12.5 years old, 14.7 years old in sporadic cases. We describe a case with a less common presentation of de novo FAP Gardner subtype.

CASE REPORT: Our patient is a 7 year old female with significant history of repaired atrial septal defect, chronic developmental milestone delay, and hypotonia requiring physical therapy and neurological evaluation. She developed headaches and hard protrusions on her head around 4 years of age. CT head showed multiple bony prominences prompting referral for surgical evaluation and possible revision due to aesthetic concerns. The lesions were recognized as osteoid osteomas and the patient was referred to a genetic specialist out of concern for Gardner Syndrome due to their association. Subsequent testing identified a heterozygous c.4391_4394delAGAG mutation in the APC gene consistent with FAP - Gardner Syndrome subtype. The patient’s parents tested negative for this mutation, essentially confirming a de novo mutation in our patient.

DISCUSSION: Due to the risk of malignancy in childhood and inevitable progression to carcinoma, early diagnosis of FAP is essential. Over half of FAP evaluations are due to family history, but since 15-20% of FAP cases are caused by de novo mutations, it is important to recognize the other likely presenting symptoms. After familial history (56.4%), the most common presenting symptoms for FAP evaluation respectively are hematochezia (17.2%), diarrhea (8%), abdominal pain (6.8%), and extra-intestinal manifestations (6.1%) such as osteoma, epidermoid cyst, papillary thyroid cancer, and hepatoblastoma. Once diagnosed management involves prophylactic colectomy, done in late teens when possible, and continued surveillance screening for any remaining colon or rectum and for upper GI polyps.
Abstract #46: ECMO THERAPY FOLLOWING CARDIAC TAMPOANADE IN HUS: A CASE REPORT

Dr. Alyson Zulfer - University of Oklahoma-Tulsa, School of Community Medicine, Department of Pediatrics
Dr. Sunaina Suhag - University of Oklahoma-Tulsa, School of Community Medicine, Department of Pediatrics
Dr. Kamna Jaiswal - The Children's Hospital at Saint Francis, Pediatric Intensive Care

INTRODUCTION: Hemolytic uremic syndrome (HUS) most frequently involves the renal and gastrointestinal systems. Less frequently, the heart is involved. This case report examines a patient with HUS involving cardiac tamponade and the use of extracorporeal membrane oxygenation (ECMO) therapy following cardiac arrest.

CASE REPORT: A patient with shiga toxin-producing *Escherichia coli*-associated hemolytic uremic syndrome suffered cardiac arrest due to massive cardiac tamponade while on hemodialysis. He was emergently placed on venoarterial ECMO therapy due to hemodynamic instability and later developed a massive hematoma within the right pleural and mediastinal spaces. A bedside thoracotomy was performed to remove the hematoma, and the patient showed immediate improvement in oxygenation and cardiac movement. He was able to be taken off ECMO therapy once cardiac function normalized, and shortly thereafter was weaned from hemodialysis.

DISCUSSION: While there are reported cases of HUS involving cardiac thrombotic micro-angiopathy and myocarditis as evidenced by pathologic evaluation of the cardiac tissue, this case represents one of only a few reported cases of cardiac tamponade in HUS patients. Furthermore, this case supports that ECMO therapy may be of use in HUS-related cardiac dysfunction until the normalization of cardiac function is attained.
Abstract #59: MULTIPLE HEALING FRACTURES SECONDARY TO NUTRITIONAL PHOSPHATE DEFICIENCY

Dr. Reema Paul - OU-Tulsa Department of Pediatrics
Dr. Ama Karikari - OU-Tulsa Department of Pediatrics

INTRODUCTION: Hypophosphatemia can occur secondary to low dietary intake, renal wasting or decreased gastrointestinal absorption. A clinical sequela of hypophosphatemia is defective bone mineralization leading to osteomalacia, making bones susceptible to pathological fractures. Pathological fractures secondary to hypophosphatemia can be misdiagnosed as intentional physical child abuse.

CASE REPORT: A 2 year old female with medical history of prematurity with Neonatal Abstinence Syndrome presented with a three day history of left proximal arm swelling. She did not appear grossly malnourished; however, her weight was <0.2% percentile and height <2% percentile. Her physical exam was notable for obvious left arm deformity with swelling/tenderness over the left elbow, but otherwise had no bruising and was neurovascularly intact. Due to delay in seeking care, skeletal survey was obtained to rule out Non-Accidental Trauma (NAT). It revealed multiple fractures in different stages of healing, including an acutely displaced left supracondylar humerus fracture. Social work and Child Abuse Pediatrics were consulted, and DHS was notified, due to high suspicion for NAT. She underwent surgical repair of her left humerus, though was noted to have osteomalacia or thin, soft bones during surgery. Due to concerns for osteomalacia, she was evaluated for a metabolic bone disorder. Dietary history was negative for malabsorption or food sensitivity. Her labs were significant for 25-hydroxy vitamin D insufficiency with hypophosphatemia 2.7 mg/dL (4.3-6.8 mg/dL). Her PTH, calcium, TSH and calcitriol levels were within normal limits. During hospitalization, it was apparent that guardian had higher than age-appropriate expectations for the patient, expecting her to feed herself well, perform basic cares and even have more developed language skills. She was started on daily Vitamin D3 with outpatient Pediatric Endocrinology follow up for further hypophosphatemia workup. After being on a truly balanced diet with increased phosphate rich foods, her repeat labs normalized. Therefore, the most likely etiology of her osteomalacia was nutritional deficiency due to combination of guardian’s limited knowledge on age-appropriate feeding expectations and low dietary intake of Vitamin D/phosphate.

DISCUSSION: The presence of multiple fractures in different stages of healing should raise suspicion for NAT, but can also occur in the setting of osteomalacia. The differential diagnosis for fractures should be broad, including pathological etiology secondary to malnutrition, malabsorption, and metabolic or wasting disorders. This can prevent the misclassification of pathological fractures due to osteomalacia as NAT, sparing families from the emotional trauma related to misdiagnosis.
Abstract #90: SPINAL EPIDURAL ABSCESS AFTER LUMBAR PUNCTURE IN A PEDIATRIC PATIENT
Dr. Rachel Kaminski - University of Oklahoma-Tulsa, School of Community Medicine, Section of Internal Medicine/Pediatrics
Dr. Jake Kaminski - University of Oklahoma-Tulsa, School of Community Medicine, Department of Pediatrics
Dr. Kimberly Martin - The University of Oklahoma – Tulsa

INTRODUCTION: Spinal epidural abscesses (SEA) are rare occurrences in both pediatric --and adult patients, with an estimated incidence of one per 100,000 in immunologically competent patients. SEAs tend to be more common in adults than in children, and are rarely reported in infants. A literature review of the last 20 years resulted in eight other reported cases of an epidural abscess in an infant. Most of these epidural abscesses in infants were reported in the cervical spine. The most common causative organism is *Staphylococcus aureus*, followed by *Escherichia coli* and mixed anaerobes. Lumbar puncture (LP) is contraindicated in this condition as it can transmit infection and can cause spinal cord herniation. Prompt surgical decompression and parenteral antibiotics are the mainstay of treatment. SEAs can be precipitated by spinal procedures, with the medical literature reporting SEAs following epidural analgesia, acupuncture, and LP.

CASE REPORT: We report the case of a three-month-old term male who presented with a two day history of fever and irritability, followed by one day history of midline lumbar swelling. He was previously admitted on two occasions before 90 days of life with fever, resulting in three separate LPs. He was determined to have Methicillin-Resistant *Staphylococcus Aureus* (MRSA) meningitis during initial admission and was treated with 14 days of vancomycin. His last LP was three weeks prior to readmission. On readmission, though irritable, his neurological exam was normal. Spinal MRI was obtained and showed a large lumbosacral epidural abscess compressing the central canal. He underwent emergent decompression followed by four weeks of treatment with vancomycin. He had no neurological deficits post-surgical debridement. Due to recurrent infections, this patient underwent immunology workup which returned negative.

CONCLUSION: LP is a necessary aspect of septic evaluation in febrile infants younger than 60 days of life, and it’s important to consider the risks of this procedure with each use. Findings of SEA in this age group can be non-specific, and should be investigated as a potential cause of infection in infants with fever, irritability and swelling at LP site. As LP is not a procedure routinely documented under surgical history, considering which aspects of a patient’s past medical history may have resulted in a LP can aid in identifying those who may be at higher risk. With prompt recognition of this infection, emergent Neurosurgical decompression and antimicrobial therapy can be initiated in order to prevent long-term morbidity and mortality.
Abstract #93: PANHYPOPITUITARISM AND BILATERAL CORNEAL
OPACIFICATIONS IN A MALE INFANT: AN UNUSUAL DICHOTOMY

Dr. Richard Wong - University of Oklahoma-Tulsa, School of Community Medicine, Department of Pediatrics
Dr. Christina Benjamin - University of Oklahoma-Tulsa, School of Community Medicine, Department of Pediatrics
Dr. Shelly Mercer - University of Oklahoma-Tulsa, School of Community Medicine, Pediatric Endocrinology

INTRODUCTION: Combined pituitary hormone deficiency, or panhypopituitarism, is a rare diagnosis that can present as a life threatening condition in infancy. Primary hypopituitarism can be caused by a multitude of factors including genetic anomalies, malformation of the pituitary gland, invasive tumors, disrupted blood supply to the gland, or injury. We describe an event with significant corneal anomalies in conjunction with multiple pituitary hormone deficiencies.

CASE REPORT: We present the case of a newborn male with bilateral corneal opacifications at birth, found to have panhypopituitarism, which included deficiencies with adrenal gland physiologic response, gonadotropin hormone deficiency, and growth hormone deficiency. His endocrinological pathologies also resulted in him being small for gestational age, with microcephaly, micropenis, and undescended testicles. He was the first child of unrelated parents. His mother had no significant past medical history and father had a history of lupus, nephrolithiasis, and bipolar disorder. His newborn screening examination did not demonstrate any abnormal findings to suggest inborn errors of metabolism or other genetic disorders. He was referred to Pediatric Ophthalmology, where he was diagnosed with congenital corneal opacities, bilateral anterior segment dysgenesis, sclerocornea, and microphthalmia. He subsequently underwent successful left corneal transplant. Referral to medical genetics demonstrated normal whole genome single nucleotide polymorphism array and negative workup for mucopolysaccharidosis. The patient was then referred to Pediatric Endocrinology due to difficulty with weight gain and immature development of the sex organs. Further endocrinological laboratory work-up resulted in the diagnosis of panhypopituitarism, including secondary adrenal insufficiency, growth hormone deficiency, and gonadotropin deficiency. The patient’s MRI of the brain was normal.

DISCUSSION: The constellation of symptoms demonstrated in the case of our patient does not fit any specific pattern or known diagnosis, making it a unique dichotomy. Ocular defects in the neonatal population are most commonly secondary to congenital malformations and genetic defects, including Axenfeld-Rieger syndrome, Septo-optic dysplasia, or other discrete gene abnormalities. While ocular defects may occur in various endocrinological diseases, there has been no definitive, associated syndrome linking bilateral corneal opacities with adrenal and growth hormone insufficiency.
Psychiatry
Abstract #3: RISING LEVELS OF GABAPENTIN MISUSE AND ABUSE: A CASE REPORT
Dr. Asha Kovelamudi - Department of Psychiatry
Dr. Jerrod Spring - Department of Psychiatry

INTRODUCTION: Gabapentin is a widely used medication. Gabapentin has off-label uses for alcohol abuse, alcohol withdrawal, cocaine withdrawal, anxiety, mood, insomnia, and more. There is debate of the exact mechanism of action; however, data shows it increases GABA synthases and GABA release resulting in a euphoric feeling.

CASE REPORT: A 45 year old married Caucasian male presented to Laureate with worsening depression, alcohol use, and suicidal thoughts with a plan to shoot himself. During the initial evaluation, the patient’s appearance was unkempt, anxious, and diaphoretic. His affect was restricted, anxious, and irritable at times. The patient met criteria for a recurrent severe major depression episode. His physical symptoms and anxiousness evidenced a likelihood of withdrawals; however, his urine drug screen was negative. He did however, have a relapse of alcohol use one night prior to his admission. Before this, the patient had been sober for 15 years and this was corroborated by his spouse. Patient also had a history of abusing stimulants, cannabis, and opioids in the past. He currently endorsed abusing Gabapentin. Patient was prescribed Gabapentin 900mg TID and was taking greater than 6,000mg a day reporting that he would abuse his own prescription and steal from his wife’s prescription as well. At this time, the patient was put on a benzodiazepine taper for both alcohol and gabapentin withdrawal and tolerated it well.

DISCUSSION: The rising concern of Gabapentin abuse goes back to 2004 when the drug became generic. The drug appears to be easier to get a hold of than other medications with similar euphoric effects, particularly at supratherapeutic doses. Between 2008 and 2011, there was a nearly fivefold increase in the number of visits to emergency rooms in U.S. cities for misuse or abuse of gabapentin as well as an increase in the number of deaths with Gabapentin use. Due to the numerous concerns with Gabapentin, fourteen states have passed legislation to start controlling this medication.

CONCLUSION: With increase in abuse and deaths associated with gabapentin, caution needs to be advised when prescribing this medication. If a patient has a history of drug abuse, is on multiple other medications with potential interactions, is currently on medication with escalating doses, or has maladaptive behavioral changes, providers should think twice about choosing gabapentin as a treatment option. Further research is needed comparing gabapentin use in the general population to gabapentin use in those states where it is now regulated.
Abstract #28: PROLONGED PSYCHOSIS AFTER A SINGLE STEROID SHOT: A CASE REPORT

Dr. Christine Langner - Department of Psychiatry
Dr. Ondria Gleason - Department of Psychiatry
Dr. Kristy Griffith - Department of Psychiatry

INTRODUCTION: Glucocorticoids, known for their anti-inflammatory effects, have become the standard of care for multiple inflammatory and immune-mediated conditions. Well known side effects include weight gain, muscle atrophy, osteoporosis, disturbed wound-healing, cataracts, adrenal insufficiency, and neuropsychiatric disturbances. Here we examine a clinical case of prolonged psychosis following a single corticosteroid injection.

CASE REPORT: A 19 year-old Caucasian female with Learning Disability was evaluated for upper respiratory infection in late November 2018 and treated with a single corticosteroid injection and 5 days of azithromycin (Z-pack). One month later, she was hospitalized with acute psychosis after cutting her chest and wrists with a knife telling her parents there was a demon inside of her, then attempting to break into their gun safe to shoot herself. A thorough medical workup found no etiology for her acute mental status change. She was diagnosed with a steroid-induced psychosis and treated with olanzapine, divalproex sodium and trihexyphenidyl; however, these were stopped shortly after initiation due to sedation and weight gain. She required inpatient psychiatric hospitalization again in January 2019. Over the next several weeks, she was treated with four different antipsychotics, none for an adequate duration. In February 2019, she was started on cariprazine 3mg daily and duloxetine 30mg daily, and presented to the OU Psychiatry Clinic to establish follow up care. She had a fearful affect, rigid posture, labile mood, and unwillingness to discuss her psychotic symptoms. She was fearful of her father, thinking he was an imposter. At baseline, her parents described her as “a quiet, but happy girl.” Medical and substance use history are non-contributory. There were no known allergies. Family history was negative for psychiatric disorders. Medications were continued. Three weeks later, her mental status was improved with more appropriate affect and better engagement; however, she continued to experience intermittent fearfulness of her father.

DISCUSSION: Neuropsychiatric effects of corticosteroid use are heterogeneous and underlying mechanisms not well defined. Current literature indicates these disturbances are associated with high doses (>40mg) and/or persistent dosing. There is less available data regarding single dose administration of steroids and neuropsychiatric disturbance.

CONCLUSION: Corticosteroids are commonly used; however, it is important to consider the possible side effects of treatment. Further research is needed to help elucidate the mechanisms associated with neuropsychiatric side effects as they can be traumatic and costly for patients.
INTRODUCTION: Frontal lobe strokes can cause various symptoms often mistaken for dementia or depression. Consequently, frontal behavioral syndromes are under-reported/under-recognized. Symptoms include language difficulty, cognitive decline, and behavioral/personality changes such as irritability, apathy, and profound lack of motivation. This report presents a patient with behavioral and personality changes due to frontal strokes.

CASE REPORT: 60-year-old man with hypertension, diabetes mellitus II, and end stage renal disease presented to Hillcrest Medical Center. Motel staff discovered him with altered mental state, deteriorated after several days in bed, unable to care for himself. En route, he received Narcan without improvement.

Physical exam was unremarkable. Psychiatric consultation noted severe cognitive deficits, cachexia, and hypersomnolence. When awakened, he exhibited exaggerated startle and exasperated one-word responses. Workup showed negative HIV, clean urinalysis, negative UDS, unremarkable CBC, ammonia=52. CMP showed K=5.1, Na=132, Cr=12.44, fasting blood glucose=170. ABG showed pH=7.48, pCO2=34.2. Unremarkable CXR. Elevated troponin with EKG indicating NSTEMI Type II.

Patient started dialysis and continued PRN Narcan. Over several days, lab values improved but mental status remained unchanged. Patient’s sister revealed his progressive declines in cognition and memory for two years, often asking the same questions every few minutes, exhibiting anterograde memory deficits. Per sister, most notable changes were in his personality: he’d become reserved, irritable, hypersomnolent, and sometimes combative.

With suspicion for stroke, MRI was obtained, showing acute to subacute, non-hemorrhagic ischemic infarct, involving inferior medial left frontal lobe, with extensive chronic senescent changes noted throughout. Findings were consistent with chronic frontal lobe disease. Patient discharged to long-term care facility.

DISCUSSION: Frontal lobe damage varies in neuropsychiatric presentation. Individuals can exhibit apathy, irritability, decreased inhibition, and altered cognition. In 67 studies reporting most common stroke locations, approximately 11.6% occurred within the frontal lobe. Our patient suffered a frontal lobe stroke but due to lack of aphasia and apraxia, stroke wasn’t initially on the differential. His apathy and behavior changes were mistaken for dementia. Despite numerous tests, conclusive diagnosis was not reached until after extended hospitalization, when stroke was considered and MRI obtained.

CONCLUSION: Maintaining broad differentials including the possibility of stroke is important. This is especially important in high-risk individuals to limit excessive medical testing and workup. The U.S. spends approximately $130 billion annually on unnecessary workup and care delivery. To limit financial burden and help patients achieve quicker recovery, healthcare professionals should keep in mind less frequent symptoms of frontal strokes.
Abstract #35: MAJOR NEUROCOGNITIVE DISORDER IN A PATIENT WITH NEUROSYPHILIS: A CASE REPORT

Dr. Elizabeth George - The University of Oklahoma - Tulsa
Dr. Katrina Lin - The University of Oklahoma - Tulsa
Dr. Ashley Walker - The University of Oklahoma – Tulsa

INTRODUCTION: Neurosyphilis is an infection of the central nervous system. Only one of ten Treponema pallidum infections will develop into syphilis. This case report will review a rare clinical encounter of neurosyphilis that manifested with neuropsychiatric symptoms in the absence of primary or secondary symptoms of syphilis, and the importance of early diagnosis and treatment.

CASE REPORT: A 62 year old Caucasian male with no past psychiatric history presented to Tulsa Center for Behavioral Health for concerns of agitation, delusions, personality changes, and memory loss. The patient’s family reported that over the span of the last three years, the patient had become increasingly withdrawn and endorsed grandiose delusions that he would come into a large sum of money. The patient had no history of personal or family psychiatric illness, and no history of substance abuse. Although the patient did not have history of HIV, the patient was at elevated risk of contracting neurosyphilis, as he is a man who has sex with men.

Psychiatric evaluation was significant for delusional thought content and disorganized thought process. He did have several episodes of aggressive behavior with staff, requiring emergency medication. He was started on Risperdal M-TAB and titrated up to 3mg twice daily, with noticeable improvement in agitation. Laboratory workup was significant for weakly reactive RPR and positive treponemal test (TPPA). He was transferred to St. Francis Hospital (SFH) for further treatment.

Diagnosis: Neurosyphilis; Major Neurocognitive Disorder due to Neurosyphilis with Behavioral Disturbances

Treatment: Following transfer to SFH, CSF testing was not obtained as patient refused lumbar puncture and thus was presumptively treated for neurosyphilis with a two week course of intravenous penicillin G. Clinical course showed improvement of psychiatric symptoms in regards to aggressive behavior, and routine antipsychotic medications were discontinued.

DISCUSSION: Per literature review, it is evident that there is irreversible damage of neurons associated with the progression of untreated neurosyphilis. It is therefore crucial to establish a diagnosis as early as possible for optimal treatment. Response to treatment is often limited; however, the ultimate goal of treatment is to halt further disease progression.

CONCLUSION: This particular clinical presentation was significant for psychiatric symptoms consistent with neurosyphilis in the absence of primary or secondary symptoms of syphilis, likely due to lack of antibiotic treatment during initial infection. It is important for psychiatrists to maintain a broad differential when evaluating patients, especially in populations at higher risk for such rare infections.
Abstract #40: LATE ONSET SCHIZOPHRENIA: A CASE REPORT
Ms. Dayana Arteaga - OU-TU School of Community Medicine, Department of Psychiatry
Dr. Kristy Griffith - OU-TU School of Community Medicine, Department of Psychiatry

INTRODUCTION: Schizophrenia is generally regarded as illness beginning in late adolescence or early adult life, but it can present after age 40. Studies of late onset schizophrenia began with Manfred Bleuler in the 1930s, who examined 126 patients whose illness began after age 40. In 1998 the International Late Onset Schizophrenia Group provided diagnosis clarity of late onset schizophrenia; recognizing two illness classifications: late onset schizophrenia (onset after age 40) and very late onset schizophrenia like psychosis (onset after age 60). Late onset schizophrenia is characterized by paranoid symptomatology, multimodal hallucinations, high female to male ratio, schizoid or paranoid traits in premorbid personality, and symptomatic improvement with neuroleptics.

CASE REPORT: A 66 year-old African American female presented for psychiatric evaluation. She reported schizophrenia diagnosis at age 51, when she began thinking “the government” conspired to spy on her. Patient began experiencing auditory hallucinations that “government figures” were monitoring her actions. She experienced escalating psychosis for over 6 months, and during an increased paranoia episode she shot a gun in her apartment. Patient was taken to the hospital and complete medical work up including brain imaging showed no organic causes accounting for her presentation. She was referred to Family and Children’s Services, diagnosed with schizophrenia, and started on aripiprazole 10 mg daily. Patient showed symptom improvement on aripiprazole, but later developed diabetes and switched to haloperidol 2 mg nightly. Patient then transferred to OU clinic, and at that time was experiencing recurrence of delusions. She believed a “supernatural force” was having sexual intercourse with her, and that the government was monitoring her actions. Haloperidol was increased to 2.5 mg nightly, and after a month she denied delusions, AH/VH, and paranoia. Her affect was euthymic, and she was not displaying disorganization in thought content or behavior.

DISCUSSION: Regardless of onset age, psychiatric and medical examinations should always be obtained to exclude identifiable etiologies. Brain imaging should be obtained to rule out differential diagnoses, including delirium, dementia, cerebrovascular accident, Parkinson’s disease, primary mood disorder with psychosis, and substance/medication induced psychosis.

CONCLUSION: Schizophrenia can appear after age 40. Patients developing schizophrenia this late in life have better prognosis due to higher premorbid functioning, less disorganization and negative symptoms, lower incident of thought disorder, and less cognitive impairment. They also respond to lower doses of antipsychotics compared to patients who develop the illness in adolescence or early adulthood.
Surgery
Abstract #38: PNEUMONECTOMY FOR PULMONARY HISTOPLASMOSIS IN PREGNANCY
Ms. Ekene Ezenwa - Department of Surgery, University of Oklahoma-Tulsa
Dr. Nasser Alamiri - Department of Surgery, University of Oklahoma-Tulsa
Dr. Geoffrey Chow - Department of Surgery, University of Oklahoma-Tulsa

INTRODUCTION: *Histoplasma capsulatum* is an opportunistic fungus found predominantly in the Ohio and Mississippi River areas in the US. Transmission is common, but clinical manifestations although rare, can occur in immunocompromised patients. The infection primarily attacks the pulmonary and reticuloendothelial systems, but may disseminate over time. Standard treatment is amphotericin B andazole therapy, with surgical management as a last-resort therapy. We report a case of pulmonary histoplasmosis during pregnancy complicated by massive hemoptysis treated with pneumonectomy.

CASE REPORT: A 22-year-old gravida 2 para 1 female with a past medical history of tobacco use and pulmonary histoplasmosis presented to the emergency department at 22-weeks gestation with a two-day history of hemoptysis and shortness of breath. The patient was admitted to the ICU and bronchoscopy performed under general anesthesia. This demonstrated bleeding from the left upper and left lower lobes of the lung and resolved. During extubation, she coughed forcefully and had profound hemoptysis. The decision for intervention was made in a multispecialty meeting. She was not a candidate for interventional radiology intervention. A left thoracotomy was performed and there was a hard, fixed mass with extensive adhesions involving the left pulmonary hilum that could not be dissected; therefore, a pneumonectomy was performed. Post-operatively she developed Acute Hypoxemic Respiratory Failure, requiring two days of mechanical ventilation. She became anemic with hemoglobin level 9.2 g/dL and required transfusions to maintain > 10 g/dL. She was eventually extubated and did not develop hypoxia or require reintubation. She was evaluated by physical therapy and was discharged post-op day 11. Subsequently, she delivered at 38w 4d with an uncomplicated repeat C-section.

DISCUSSION: Of the immunocompromised patients that develop histoplasmosis, there are few case reports of histoplasmosis in pregnancy. This patient had a previous diagnosis of histoplasmosis prior to pregnancy, no diagnoses relating to immunosuppression, and the etiology of her infection was unknown. It may be hypothesized that pregnancy-related immunosuppression perpetuated the acute hemoptysis. Moreover, there are few case reports focusing on pneumonectomies in pregnancy and their clinical outcomes.

CONCLUSION: This case report shows a successful pneumonectomy as surgical treatment in a second-trimester female with histoplasmosis.
Abstract #43: INTRAMUSCULAR MYXOMA OF THE LOWER EXTREMITY: DIAGNOSIS AND TREATMENT OF RARE PATHOLOGY
Mr. Mitchell McCain - Department of Surgery, University of Oklahoma-Tulsa
Dr. Nasser Alamiri - Department of Surgery, University of Oklahoma-Tulsa
Dr. Justin Atherton - Department of Surgery, University of Oklahoma-Tulsa

INTRODUCTION: An intramuscular myxoma is a rare, benign soft-tissue tumor found deeply contained within skeletal muscles. It is a part of a heterogeneous group of tumors with overlapping histological features that ranges from benign neurofibromas and schwannomas, to malignant liposarcomas and leiomyosarcomas. Intramuscular myxomas generally presents as slow-growing, solitary lesions that are firm, mobile, and occasionally fluctuant with or without pain. Histologically, the tumor consists mostly of an extracellular myxoid matrix with high water content that is secreted by stellate cells and bipolar fibroblasts within the matrix.

CASE DESCRIPTION: Our patient is a 77 year-old female presented to her primary care provider with a raised tender lesion on upper left thigh about 3 cm in diameter that prompted a left lower extremity ultrasound focused on the lesion. Ultrasound showed an oval heterogeneous hypoechoic intramuscular mass measuring 4.9 x 4.4 x 5.2 cm. An MRI was obtained which demonstrated a well-circumscribed intramuscular mass with multiple thin septations within the fascia of the vastus medialis measuring 5.5 x 3.6 x 5.2 cm and within 2.5 mm from the femoral neurovascular bundle. An incisional biopsy showed tissue most consistent with intramuscular myxoma. Subsequently, the patient underwent wide excision of the lesion without violating the tumor capsule. The procedure was done in an outpatient setting and without complications. The final pathology revealed encapsulated intramuscular myxoma without evidence of malignancy.

DISCUSSION: The incidence of intramuscular myxoma is reported between 0.1 and 0.13 per 100,000 population. Most present as solitary, painless lesions that are firm, mobile, and sometimes fluctuant when palpated. It is most commonly seen in large muscle groups such as thighs, shoulders, and buttocks in patients between 50 and 70 years of age with a higher prevalent in females. Although Ultrasound, CT, and MRI imaging are often used in evaluation, intramuscular myxoma is difficult to diagnose and usually requires biopsy and pathologic examination. Since the incidence of soft tissue sarcomas is between 2 and 3 per 100,000 and the presentation can be similar to intramuscular myxoma, biopsy is also important to rule out malignant tumors, especially different types of sarcoma.

CONCLUSION: A high level of suspicion for malignancy needs to be maintained when dealing with extremity tumors. Resection of apparently benign lesions should be done to completely rule out malignancy.
Abstract #50: SUBHEPATIC ABSCESS DUE TO RETAINED GALLSTONES AFTER LAPAROSCOPIC CHOLECYSTECTOMY
Dr. Eric Waetjen - Department of Surgery, University of Oklahoma-Tulsa
Dr. Michael Nolen - Department of Surgery, University of Oklahoma-Tulsa
Dr. C. Anthony Howard - Department of Surgery, University of Oklahoma-Tulsa

INTRODUCTION: Laparoscopic cholecystectomy is the gold standard for treatment of acute and chronic calculous cholecystitis. It is preferable in most situations to an open procedure, but an often overlooked occurrence during this procedure may lead to unforeseen complications. Spillage of gallstones intraoperatively may result from gangrenous gallbladder, obliteration of due to inflammation, significant distention of the gallbladder, or lack of attention to stone removal by the surgeon. When stones are spilled they are retrieved when they are visible, but often they can be fractured with graspers or fall out of view and subsequently may be left in the abdomen. Although complications due to retained stones are not common, they have a wide range of presentations and can result in significant morbidity to the patient.

CASE REPORT: A 59-year-old male presented with a rapidly growing soft tissue mass in the right posterior flank. Notably, the patient had an elective laparoscopic cholecystectomy 17 months prior for symptomatic cholelithiasis. The remainder of his medical history was significant for an ERCP 1 month prior to cholecystectomy, and non-insulin dependent diabetes mellitus. Examination revealed a right flank mass, approximately 4cm x 5cm, that was tender and erythematous. White blood cell count, hemoglobin, and hematocrit were all within normal limits. A CT scan obtained prior to presentation revealed a soft tissue density below the right hepatic lobe measuring 5.1cm x 2.8cm, extending posteriorly through the chest wall between the 11th and 12th ribs. The lesion was rim-enhancing and concerning for abscess versus neoplastic process. The decision was made to proceed with incisional biopsy versus incision and drainage. A posterior flank incision was made and carried through the subcutaneous tissues until a copious amount of pus was drained. Along with this drainage, multiple stones measuring up to 3cm were discovered. A drain was placed and the patient recovered after an extended course of antibiotics.

DISCUSSION: Complications due to retained gallstones are uncommon; therefore, surgeons may not expend significant effort to retrieve them. Additionally, complications can present remotely after uneventful laparoscopic cholecystectomy, even if spillage of stones was not documented. It is prudent to make every reasonable effort to retrieve stones intraoperatively, and a low threshold of suspicion for retained stones must be maintained by both surgeons and primary care physicians after cholecystectomy.
Abstract #62: METASTATIC BREAST CANCER TO A PERICOLIC LYMPH NODE

Dr. Tiffany Wheeler - Department of Surgery, University of Oklahoma-Tulsa
Dr. Nasser Alamiri - Department of Surgery, University of Oklahoma-Tulsa
Dr. Stuart Hoff - Department of Surgery, University of Oklahoma-Tulsa

INTRODUCTION: Breast cancer is the second most common cause of cancer death among US women. In fact, they have a one in eight lifetime risk of being diagnosed with breast cancer. Metastasis is most likely to occur in the bones, brain, lung or liver. Metastasis to the gastrointestinal tract is rare with only a few reported cases in the literature. Metastatic disease to the gastrointestinal tract lymph nodes is even less common. We report a patient with colonic stricture requiring colectomy with an incidental finding of metastatic breast cancer in a pericolic lymph node.

CASE REPORT: This patient was a 65 year-old female who initially presented to the hospital with a five-day history of abdominal pain, fatigue and dysuria. After several weeks of workup including three colonoscopies, multiple CT scans and a barium enema X-ray, the patient was diagnosed with a severe stenosis in the sigmoid colon. Biopsies taken did not show evidence of malignancy. Due to recurrent symptoms, she was scheduled for sigmoid colectomy. She successfully underwent the procedure and had an uncomplicated recovery. Pathology of the stricture revealed no evidence of malignancy, however one of three resected lymph nodes were positive for metastatic carcinoma with staining patterns consistent with a breast origin. Mammography, breast and bone marrow biopsy, and PET-CT were done. The patient was diagnosed with invasive lobular carcinoma of the breast with metastasis to the bone marrow and a pericolic lymph node. At that point, she began palliative treatment and expired nine months after the diagnosis was made.

DISCUSSION: This case illustrates the potential for metastasis to unexpected locations and the importance of screening mammography. Asymptomatic breast cancer is typically diagnosed following routine screening mammography. Metastatic breast cancer can be a devastating diagnosis, which is why it is critical that patients follow the guidelines for breast cancer screening. Earlier recognition of this patient’s breast mass could have allowed for initiation of treatment early in the disease process which is an otherwise curable disease.
Abstract #63: FENESTRATED ENDOVASCULAR GRAFT REPAIR OF JUXTARENAL ABDOMINAL AORTIC ANEURYSM

Dr. James Sahawneh - Department of Surgery, University of Oklahoma-Tulsa
Dr. Ranan Mendelsberg - Department of Surgery, University of Oklahoma-Tulsa
Dr. Vernon Horst - Department of Surgery, University of Oklahoma-Tulsa
Dr. Hyein Kim - Department of Surgery, University of Oklahoma-Tulsa
Dr. Kelly Kempe - Department of Surgery, University of Oklahoma-Tulsa
Dr. Kevin Taubman - The University of Oklahoma - Tulsa
Dr. Peter Nelson - The University of Oklahoma – Tulsa

INTRODUCTION: Juxtarenal abdominal aortic aneurysms (jAAA) are anatomically unsuitable for standard endovascular aneurysm repair due to involvement of the renal artery origins. We demonstrate an elective treatment of a jAAA utilizing a novel technique of a fenestrated endovascular stent graft (FEVAR).

CASE REPORT: A 75-year-old male with a past medical history of chronic tobacco use and atrial fibrillation, was discovered to have a jAAA on computerized tomography (CT) during evaluation for an inguinal hernia. He presented for vascular evaluation one-month post herniorrhaphy. The aneurysm was asymptomatic and CT angiography identified the 5.8 cm jAAA with a large mural thrombus. A Zenith fenestrated AAA endovascular graft (ZFEN) was configured in advance based on his imaging. The patient was taken to the hybrid operating room for angiogram and endovascular placement of the ZFEN. He had excellent placement of the graft and was discharged home postoperative day one. Follow-up course has continued to be without complications.

DISCUSSION: Aortic aneurysms are the 14th leading cause of death in the United States. A jAAA is defined as an aneurysm extending to, but not involving the renal artery orifices. Prophylactic repair of a large or enlarging abdominal aortic aneurysm (AAA) with graft placement is indicated due to increased risk of aneurysmal rupture. Up to 40% of AAA are not compatible with commercially available standard EVAR stents. Guidelines suggest 15 mm of normal aorta below the renal arteries and an aneurysm neck angulation of under 60 degrees. If not amenable to these parameters, further options include open repair, non-surgical management, or complex endovascular repair including FEVAR. Endovascular treatment of AAA when compared to open repair provides decreased rates of postoperative complications, hospital stay, blood loss, and 30-day mortality. Since 2012, the ZFEN remains the only FDA approved fenestrated stent. The ZFEN stent is a customized endograft designed specifically based on high resolution CT. The proximal aspect is maneuvered above the visceral arteries, with openings incorporated in the stent to avoid occlusion of these major vessels. Stents are placed in the vessels through the fenestrations to ensure patency. Average hospital stay is 3 days. Follow up is recommended at months 1, 3, 6, and then yearly with imaging utilizing either CTA or ultrasound.

CONCLUSION: Although jAAA may not allow for standard EVAR, fenestrated stent graft systems provide options for repair of aneurysms at risk of rupture without compromising visceral artery blood supply.
Abstract #66: SNORKELED IN THE (S)EVAR
Mrs. Jessica Heard - Department of Surgery, University of Oklahoma-Tulsa
Dr. Ranan Mendelsberg - Department of Surgery, University of Oklahoma-Tulsa
Dr. Vernon Horst - Department of Surgery, University of Oklahoma-Tulsa
Dr. Kevin Taubman - The University of Oklahoma - Tulsa
Dr. Kelly Kempe - Department of Surgery, University of Oklahoma-Tulsa
Dr. Peter Nelson - The University of Oklahoma - Tulsa
Dr. Hyein Kim - Department of Surgery, University of Oklahoma-Tulsa

INTRODUCTION: Nearly half of all abdominal aortic aneurysm (AAA) repairs are completed endovascularly, which has resulted in a significant reduction in perioperative mortality. We describe an endovascular aortic repair (EVAR) using a snorkel method in a patient with a large, para-renal AAA discovered incidentally.

CASE REPORT: 74-year-old male presents to the emergency department with an acute abdomen requiring exploratory laparotomy and partial colectomy. A 6.7 cm, asymptomatic, para-renal AAA was incidentally found on his admission CT scan. It was determined that repair of his aorta would need to be completed in the current hospital admission due to the size and associated risk of rupture. A bifurcated endograft was deployed below the renal arteries and taken distally to the level of the iliac bifurcations. The bilateral renal arteries and superior mesenteric artery were accessed from the left axillary artery and covered stents were positioned across the ostia of all 3 vessels. An aortic cuff was used to extend the EVAR graft proximally from the renal arteries to just distal to the celiac artery. The visceral stents were deployed simultaneously and the balloons were kept inflated while the cuff was deployed. Postoperatively the patient suffered acute kidney injury, likely due to ischemia intraoperatively, but otherwise recovered well.

DISCUSSION: Para-renal aneurysms are unique in that the renal arteries arise from the aneurysmal sac, which occurs in only 5% of AAAs. Snorkeled and fenestrated EVARs provide an alternative to open repair of these AAAs with decreased risk of immediate morbidity and mortality. While snorkeled EVARs are a more technically challenging repair, as they require antegrade placement of parallel stents in the visceral or renal arteries, they do provide a cost-effective and immediately available alternative to custom built fenestrated grafts that can takes weeks to produce. There is a risk of type Ia endoleak. This risk is directly proportional to the number of snorkeled grafts placed, but the risk can be decreased by placing a second graft distal to the celiac artery to extend the proximal seal zone.

CONCLUSION: Extension of the proximal seal zone with preservation of visceral arteries, expands the role of aortic endografts from their traditional infrarenal role to the suprarenal aorta making endovascular repair possible in cases of urgent para-renal AAA.
Abstract #69: SYMPTOMATIC PANCREATIC SEROUS CYSTADENOMA
Ms. Saba Bingabr - College of Medicine, University of Oklahoma School of Community Medicine
Dr. Stuart Reynolds - Department of Surgery, University of Oklahoma-Tulsa
Dr. Nelson Royall - Department of Surgery, University of Oklahoma-Tulsa

INTRODUCTION: Pancreatic serous cystadenoma (SCA) is a benign cystic neoplasm without malignant potential. Approximately 50% of patients with SCAs present with symptoms, related to local mass-effect. Characteristic CT and MRI can be diagnostic for SCA, with EUS reserved to exclude mucinous cysts in indeterminate cases. Although some have historically advocated for routine surgical excision due to predicted growth, modern series have demonstrated more strict criteria for resection including presence of symptoms or size greater than 4cm.

CASE REPORT: We present a 74-year-old male with a past medical history consisting of chronic opiate use and type II diabetes mellitus who presented with a 2 month history of anorexia and weight loss with subsequent jaundice and refractory nausea and emesis. He had previously undergone an open cholecystectomy for acute biliary pancreatitis. He had no known family history of pancreatic cancer or exposure risks. He was found to have hyperbilirubinemia with imaging demonstrating a large pancreatic cystic mass producing ductal obstruction. An MRI Pancreas Protocol demonstrated a 7.4 x 6.8cm macrocystic serous cystadenoma with characteristic central calcifications within the pancreatic head producing extrinsic compression on the common bile duct, main pancreatic duct, and duodenum. He underwent an EUS with FNA demonstrating benign ductal epithelial cells and hemosiderin laden macrophages. Due to progressive hyperbilirubinemia and inability to cannulate the ampulla, a transhepatic cholangiocatheter was placed. After medical optimization, he underwent an open pylorus-preserving pancreatectoduodenectomy (Whipple Procedure). He had an uneventful post-operative course with discharge home and no complications at follow-up. Surgical pathology confirmed complete resection of the pancreatic head SCA with obstructive chronic pancreatitis without any carcinoma evident.

DISCUSSION: The prevalence of pancreatic cysts found on abdominal imaging is estimated to range from 2.6% to 19.6%. SCA is estimated to represent 16-34% of all pancreatic cystic neoplasms. The most common presenting symptoms include abdominal pain, jaundice, pancreatitis, and weight loss. Women are more likely to present younger, while men present with larger lesions. SCAs are estimated to have a yearly growth rate of 0.6 cm/year in most cases. SCAs greater than 4cm in diameter have a significantly increased growth rate compared to smaller than 4cm. Current recommendations advocate resection of all asymptomatic SCAs and asymptomatic SCAs greater than 4cm in diameter. There was a correlation between tumor size and age in asymptomatic patients. Although SCAs represent a benign pancreatic cystic neoplasm, thorough evaluation and early intervention are critical to prevent severe local complications.
INTRODUCTION: With an expanding body of evidence demonstrating improved outcomes with endovascular aneurysm repair (EVAR), it has become a first line treatment for abdominal aortic aneurysms (AAA). However, over time and with more commercially available devices, the adherence to strict anatomic criteria is sometimes variable. This may lead to the choice of devices not suited for all aneurysms, leading to an increased risk of complications such as immediate or delayed endoleaks. The following case demonstrates an example of a complex type III endoleak (leak between graft components) and novel strategies applied to address this challenging complication.

CASE REPORT: The patient is a 73-year-old male with history of prior EVAR for AAA and bilateral iliac aneurysms in 2015 utilizing a modular bifurcated endograft. This included a "sandwich" technique with extension into the right external iliac and hypogastric arteries. The patient was treated within 2 weeks of discharge for an access site complication. Then, failed to follow up with his initial surgeon for surveillance. In 2018, he presented with evidence of enlarging aortic and iliac artery aneurysms. Computed tomography angiography (CTA) revealed a type 3 endoleak with separation of all components from the main body including the bilateral common iliac, right external iliac and hypogastric limbs. The iliac aneurysms had enlarged to 9.5cm on the left and 6.1cm on the right imparting a significant rupture risk. With the added concern for maintaining patency of the only remaining hypogastric artery, open versus endovascular repair was weighed. The repair was accomplished using a combination of advanced endovascular techniques to re-cannulate the separated components. Then a new, modular bifurcated endograft with distal limb extensions were deployed to reline the entirety of the old graft. In-line and hypogastric arterial flow was preserved with only a small gutter leak on the right. He was discharged post-operatively day 1 without incident.

DISCUSSION: As EVAR is now a common procedure for AAA repair, more complex anatomy is being treated. It remains imperative that appropriate pre-operative device selection and post-operative surveillance protocols be carefully preformed to reduce and identify complications which may lead to sac expansion and rupture. Current recommendations suggest follow-up at 1-month, 6-month, then annual intervals with CTA. When deemed stable, the potential transition to duplex ultrasound to decrease radiation exposure and cost may be considered. Furthermore, with difficult anatomy and post-operative complications, newer devices and techniques offer salvage options when traditional interventions are not possible.
Abstract #72: PRIMARY PANCREATIC FOLLICULAR LYMPHOMA
Ms. Sonya Narula - College of Medicine, University of Oklahoma School of Community Medicine
Dr. Stuart Reynolds - Department of Surgery, University of Oklahoma-Tulsa
Dr. Nelson Royall - Department of Surgery, University of Oklahoma-Tulsa

INTRODUCTION: Primary pancreatic lymphoma (PPL) is a rare pancreatic malignancy. PPL represents 1% of extra-nodal lymphomas and 0.5% of pancreatic neoplasms. PPL can be further classified based on histological subtypes, the predominant subtype being diffuse large B-cell lymphoma (77%). A less common subtype is follicular (14%), which to date has only 6 known published cases.

CASE REPORT: We present a 74-year-old female who presented with progressive anorexia and unintentional weight loss for 4 weeks with refractory nausea and emesis. At an outside hospital, she was found to have a large hypodense pancreatic mass in the pancreatic head producing partial duodenal obstruction. A CT Pancreas Protocol demonstrated a 9cm hypodense pancreatic head mass with encasement of the superior mesenteric artery and vein and extension along the mesenteric root. The mass was producing near complete duodenal obstruction with moderate obstruction of the common bile duct and pancreatic duct. She underwent EUS with FNA which demonstrated a low-grade follicular lymphoma. A distal feeding tube was placed and she was initiated on pancreatic enzyme replacement therapy for management of protein malnutrition and exocrine pancreatic insufficiency. She underwent a bone marrow aspirate which demonstrated marrow involvement. She was evaluated by Medical Oncology and initiated on Rituxan, Cylophosphamide, Doxorubicin, Vincristine, and Prednisone (R-CHOP) therapy. Follow-up imaging at 2 weeks after initiation of systemic therapy demonstrated rapid reduction in the pancreatic mass with resolution of the duodenal obstruction.

DISCUSSION: PPL is an uncommon primary lymphoma and pancreatic neoplasm, of which follicular subtype is a rare entity. A large retrospective study including 30,000 patients had only 44 patients diagnosed with pathologically confirmed PPL. Due to similar clinical and radiographic presentations with pancreatic ductal adenocarcinoma (PDAC), the differentiation of PPL from more common primary pancreatic neoplasms is challenging without biopsy. A typical distinguishing feature of PPL compared to PDAC on imaging is lymphadenopathy inferior to the renal vein. Endoscopic ultrasound with core needle biopsy and flow cytometry is required for diagnosis. In contrast to PDAC, modern chemotherapy agents are curative in PPL. PPL has a significant and rapid response to anthracycline based chemotherapy. Surgical interventions for PPL should be avoided with endoscopic or conservative management until initiation of systemic chemotherapy. The follicular histological subtype has a 5-year survival of 100% based on published series. Relapse for PPL is very rare and tends to occur in distant sites, thus requiring surveillance with CT for at least 7 years after therapy.
Abstract #74: ENDOVASCULAR ARTERIAL CONTROL DURING A PARTIAL NEPHRECTOMY IN A TRANSPLANTED KIDNEY

Dr. Ranan Mendelsberg - University of Oklahoma-Tulsa, School of Community Medicine, Department of Surgery
Dr. Vernon Horst - Department of Surgery, University of Oklahoma-Tulsa
Dr. Hyein Kim - Department of Surgery, University of Oklahoma-Tulsa
Dr. Kelly Kempe - Department of Surgery, University of Oklahoma-Tulsa
Dr. Peter Nelson - The University of Oklahoma - Tulsa
Dr. Kevin Taubman - The University of Oklahoma – Tulsa

INTRODUCTION: 17,000 renal transplants are performed annually and although rare, renal malignancies present unique operative challenges when they arise.

CASE REPORT: A 55-year-old female with end-stage renal disease underwent a renal transplant in 2017. During routine surveillance, she was noted to have a concerning mass on the transplanted kidney. A partial nephrectomy was performed by the urology service, and endovascular arterial control was obtained by the vascular surgery service prior to the dissection. Through a percutaneous right common femoral arterial access, an appropriately sized endovascular balloon was inflated within the transplanted renal artery. This was removed once the partial nephrectomy was completed. Final pathology was positive for papillary renal cell carcinoma. She had no signs of recurrence during her most recent follow-up visit and her kidney function has been preserved.

DISCUSSION: Renal malignancy occurs in 0.3% of all renal transplants, 66% of which receive a total transplant nephrectomy. Preservation of renal function is of a primary concern in this patient population, and partial nephrectomy has been strongly advocated as a safe alternative to total transplant nephrectomy in select patients. As it is a re-operative field, resection has an increased risk of hemorrhage, injury to the kidney, the renal hilum, and the iliac vasculature. Endovascular techniques are currently utilized to obtain vascular control in a variety of situations. Through a percutaneous arterial access, an appropriately sized balloon can be inflated to occlude an artery. This concept is being used routinely for aortic occlusion in both ruptured abdominal aortic aneurysms and trauma patients. This technique, which was used in this case, allowed avoidance of renal hilar dissection and its associated complications, without an increase in blood loss.

CONCLUSION: Multidisciplinary approaches to patient care allow utilization of each specialty’s unique concepts and technologies, in order to best care for a patient. In this case, the patient’s risks of complications were diminished, while still allowing an appropriate oncologic result.
Abstract #76: TRANS-CAROTID STENTING WITH DYNAMIC FLOW REVERSAL: AN ALTERNATIVE TO CAROTID ENDARTERECTOMY

Dr. Tim Hughes - Department of Surgery, University of Oklahoma-Tulsa
Dr. Ranan Mendelsberg - University of Oklahoma-Tulsa, School of Community Medicine, Department of Surgery
Dr. Vernon Horst - Department of Surgery, University of Oklahoma-Tulsa
Dr. Kelly Kempe - Department of Surgery, University of Oklahoma-Tulsa
Dr. Kevin Taubman - The University of Oklahoma - Tulsa
Dr. Peter Nelson - The University of Oklahoma - Tulsa
Dr. Hyein Kim - The University of Oklahoma - Tulsa, Department of Vascular Surgery

INTRODUCTION: Carotid endarterectomy, while beneficial in the treatment of carotid artery atherosclerosis for the prevention of cerebrovascular accident and death, carries a known risk of peri-operative infarction. Transfemoral carotid artery stenting carries a risk of peri-operative stroke. We describe a case of trans-carotid artery revascularization (TCAR) with dynamic flow reversal as an effective alternative.

CASE REPORT: An 80-year-old female with a history of recurrent transient ischemic attacks presented to the hospital with an episode of left upper and left lower extremity weakness. CTA revealed a stenosis at the origin of the internal carotid arteries bilaterally. Carotid duplex confirmed a 50-60% stenosis bilaterally. The symptomatic right sided lesion required treatment. She was deemed high risk for carotid endarterectomy and transfemoral stenting. The decision was made to perform trans-carotid arterial revascularization (TCAR). This was performed using the ENROUTE® Transcarotid Neuroprotection system. The arterial sheath was cannulated into the right common carotid artery, and the venous return sheath connected to the left common femoral vein. After the device was engaged, a stent was placed within the right internal carotid artery under fluoroscopic guidance.

DISCUSSION: Cerebrovascular accident remains one of the leading causes of death in the United States. Carotid endarterectomy has proven to be a major success in reducing stroke-related morbidity and mortality[1]. However, many patients who would benefit from endarterectomy are poor operative candidates due to the risk of myocardial infarction. The previous alternative, trans-femoral carotid artery stenting (TF-CAS) carried a risk of peri-operative stroke. The newer technique of TCAR is less invasive, allowing for a better peri-operative safety profile than endarterectomy. The true benefit is the dynamic flow-reversal, which prevents down-stream embolization during carotid instrumentation, avoiding the main downfall of TF-CAS. The ROADSTER trial has demonstrated that TCAR carries a 96% procedural success rate, paralleling endarterectomy, while risk of major adverse events within 30 days of the procedure was less than 5%, which parallels that of TF-CAS[2]. This indicates TCAR could be equally effective and safe alternative to carotid endarterectomy for high-risk patients.
Abstract #79: ELLIPSYS ARTERIOVENOUS FISTULA CREATION SYSTEM FOR A HEMODIALYSIS PATIENT

Mr. James Charles - University of Oklahoma – Tulsa, School of Community Medicine
Dr. Ranan Mendelsberg - Department of Surgery, University of Oklahoma-Tulsa
Dr. Vernon Horst - Department of Surgery, University of Oklahoma-Tulsa
Dr. Hyein Kim - Department of Surgery, University of Oklahoma-Tulsa
Dr. Kelly Kempe - Department of Surgery, University of Oklahoma-Tulsa
Dr. Kevin Taubman - The University of Oklahoma - Tulsa
Dr. William Jennings - University of Oklahoma-Tulsa
Dr. Peter Nelson - The University of Oklahoma – Tulsa

INTRODUCTION: Creation of an arteriovenous fistula has long been the procedure of choice for hemodialysis access; however, until recently this procedure required a surgical incision. The recent development of the Ellipsys device has allowed physicians to perform this through a simple needle stick and ultrasound guidance. We describe a case study examining this procedure and the benefits seen by the patient.

CASE REPORT: A 61-year-old male with diabetic nephropathy resulting in stage 4 chronic kidney disease, underwent vein mapping for operative planning. He had suitable anatomy for a percutaneous AVF with a deep communicating vein adjacent to the proximal radial artery. Following an axillary nerve block, ultrasound guidance was used to direct a 21-gauge needle through the cephalic vein and into the proximal radial artery. The device was delivered over a wire and activated to create an anastomosis between the artery and vein. Skin-glue was placed over the puncture site and the patient went home. His fistula matured by his 6-week follow-up appointment.

DISCUSSION: Prior to hemodialysis, a patient must undergo a vascular procedure to provide an access point. Due to the longitudinal success rate and low relative risk of infection, the common first choice is to construct an AV fistula. The creation of the Ellipsys device, coupled with ultrasound usage, has transformed this to a minimally invasive procedure. Through percutaneous access, the device utilizes thermal energy to fuse the artery and vein together. This anastomosis causes hypertrophy of the vessel and reduces the likelihood of collapse due to the high flow rate occurring during hemodialysis. Utilizing this device leads to a shorter procedure time, and usually only local or regional anesthesia is required, resulting in higher patient satisfaction. In addition to being minimally invasive, the advantages of this procedure also include high success rate and faster site maturation. An early study examined the results of fistula creation using this device and found a 97% technical success rate in the 34 patients that underwent the procedure, and at 6 weeks all fistulas were ready for dialysis use. An additional multicenter study found a 95% procedural success in 107 patients, with no major adverse effects.

CONCLUSION: The development of the Ellipsys device has provided physicians with a minimally invasive option for AV fistula creation in patients requiring hemodialysis, while simultaneously delivering a high success rate.
Abstract #82: RECURRENT ACUTE PANCREATITIS SECONDARY TO PANCREATICOJEJUNOSTOMY ANASTOMOTIC STRURE AFTER PANCREATOMDUODENECTOMY

Ms. Bethany Knight - College of Medicine, University of Oklahoma School of Community Medicine
Dr. Stuart Reynolds - Surgery
Dr. Nelson Royall - Department of Surgery, University of Oklahoma-Tulsa

INTRODUCTION: Pancreateojejunostomy anastomotic stricture after a pancreatoduodenectomy (Whipple procedure) is rarely reported, with an incidence of 1.4-11.4%. These strictures become symptomatic on average 34 months after the initial surgery, most commonly related to exocrine pancreatic insufficiency and recurrent acute pancreatitis. Endoscopic interventions are typically the primary intervention involving endoscopic retrograde pancreatography (ERP) with stent. This technique often requires modern advanced endoscopic techniques including endoscopic ultrasound-rendezvous approaches and has been shown to have a high risk of recurrence. Surgical management is considered definitive via revision of the pancreatojejunostomy or longitudinal pancreatojejunostomy.

CASE REPORT: We present a 63 year-old male, who had undergone an open pylorus-preserving pancreatoduodenectomy 39 months before presentation for an ampullary adenoma. Approximately 3 years after this procedure, he developed his initial episode of acute obstructive pancreatitis. An MRCP at the time demonstrated development of a dilated main pancreatic duct with pancreatolithiasis at the pancreatojejunostomy anastomosis. An attempted ERP was unsuccessful in re-cannulation of the anastomosis. He developed an additional episode of acute pancreatitis requiring hospitalization. He was found to have exocrine pancreatic insufficiency which was complicated by severe malnutrition for which he was initiated on pancreatic enzyme replacement therapy. He continued to have severe persistent abdominal pain requiring daily opiate usage and therefore underwent an open Roux-en-Y longitudinal pancreatojejunostomy without complication. He had an uneventful post-operative course and was discharged home with resolution of his pain. On follow-up, he was without recurrence and off pain medication.

DISCUSSION: This patient presented with a complete pancreatojejunostomy anastomotic stricture following a pancreatoduodenectomy for benign disease after approximately 3 years. An important pathognomonic feature of a pancreatojejunostomy stricture is the presence of pancreatolithiasis at the anastomosis, which is related to stasis within the duct. Stents have shown to have proven benefit in situations with smaller stones, however stenting was not a viable option in this particular patient. A majority of patients will not have main pancreatic duct dilation. Conservative management involves pancreatic enzyme replacement. Endoscopic interventions require advanced endoscopic interventions including EUS guided ERP with stent placement. Surgical intervention is considered definitive via revision of the pancreatojejunostomy anastomosis or drainage procedure (Longitudinal Pancreateojejunostomy). Selection of the appropriate intervention therefore requires multidisciplinary approach. The incidence of pancreatojejunostomy strictures is likely to increase with improved survival for pancreatic malignancies and surveillance for late complications following pancreatoduodenectomy procedures is critical to improving quality of life.
Abstract #86: AN UNUSUAL PRESENTATION OF COMMON FEMORAL ARTERY ANEURYSM AND REPAIR VIA HYBRID APPROACH

Dr. Zakiya Shakir - OU Tulsa Department of Vascular Surgery
Dr. Ranan Mendelsberg - OU Tulsa Department of Vascular Surgery
Dr. Vernon Horst - Department of Surgery, University of Oklahoma-Tulsa
Dr. Kelly Kempe - Department of Surgery, University of Oklahoma-Tulsa
Dr. Kevin Taubman - The University of Oklahoma - Tulsa
Dr. Peter Nelson - The University of Oklahoma - Tulsa
Dr. Hyein Kim - Department of Surgery, University of Oklahoma-Tulsa

INTRODUCTION: Common femoral artery (CFA) aneurysms are an uncommonly seen subset of peripheral artery aneurysms. They are usually asymptomatic and found incidentally, but carry a risk of thrombosis with distal embolization as well as rupture, especially when greater than 2.5 cm. Risk factors include hypertension and smoking. They are associated with aneurysms in other locations, most commonly in the aortoiliac vessels. Therapeutic options include open and endovascular repair.

CASE REPORT: We present a 68 year-old man with a right common femoral artery aneurysm, as well as multiple aneurysmal dilations of the infrarenal aorta. Our patient presented 20 years after a traumatic below knee amputation (BKA) with non-healing ulcerations to his stump. On examination, he had a large non-pulsatile mass in the right groin and two 3-cm wounds involving his right patella and right BKA stump. He underwent a CT angiogram of the right leg which demonstrated a 3-cm CFA aneurysm with a large occlusive thrombus and collateralization of the surrounding arteries, as well as a bilobed aneurysm of the infrarenal aorta. Given these findings, he underwent surgical intervention; intraoperatively, the CFA appeared to have a traumatic dissection resulting in aneurysm formation and retrograde thrombus into the external and common iliac vessels. He underwent a hybrid operation with an open right CFA repair with PTFE interposition graft and profundaplasty, followed by balloon angioplasty and stenting of the right external iliac and common femoral arteries. Completion angiogram demonstrated in-line flow through the stent and interposition graft. He recovered from his surgery without any complications and was discharged on postoperative day 3.

DISCUSSION: Our patient presented with a CFA aneurysm and nonhealing wounds due to a traumatic dissection resulting in an occlusive thrombus. This is a rare etiology of CFA aneurysms, which are usually seen in older men with a history of hypertension and tobacco use. Potential complications include distal embolization, rupture, and thrombosis. Most symptomatic patients have chronic limb ischemia, which was manifested in our patient as nonhealing wounds. In this case, we were able to successfully treat our patient’s large CFA aneurysm using a combination of open repair with an interposition graft, and endovascular repair using balloon angioplasty and stenting. We achieved a good result with this hybrid approach and re-established in line blood flow to our patient’s limb.
Abstract #87: SNORKEL TECHNIQUE: AN ADVANCED ENDOVASCULAR TECHNIQUE FOR COMPLEX ABDOMINAL AORTIC ANEURYSMS

Dr. Zakiya Shakir - OU Tulsa Department of Vascular Surgery
Dr. Ranan Mendelsberg - Department of Surgery, University of Oklahoma-Tulsa
Dr. Vernon Horst - Department of Surgery, University of Oklahoma-Tulsa
Dr. Kelly Kempe - Department of Surgery, University of Oklahoma-Tulsa
Dr. Kevin Taubman - The University of Oklahoma - Tulsa
Dr. Peter Nelson - The University of Oklahoma - Tulsa
Dr. Hyein Kim - Department of Surgery, University of Oklahoma-Tulsa

INTRODUCTION: Endovascular aneurysm repair (EVAR) has been proven to be a safe and effective management of abdominal aortic aneurysms (AAA) when compared to open repair. As endovascular techniques, technology, and outcomes have evolved, complications of arterial coverage have been recognized, and more advanced skill sets are required to repair AAAs with complex anatomy. In this case, we describe an endovascular repair of an AAA with concomitant right common iliac artery (CIA) aneurysm, using a snorkel technique to preserve the hypogastric artery and prevent complications such as pelvic claudication, colon ischemia, and erectile dysfunction.

CASE REPORT: Our patient is a 65-year-old male with a history of hypertension and smoking who presented to the outpatient surgery clinic with an expanding asymptomatic infrarenal AAA. It had grown from 4.6 cm to 5.1 cm over a period of 20 months, and on CTA he was also noted to have a 2.6 cm right CIA aneurysm. In order to preserve arterial inflow through the right hypogastric artery, we performed an EVAR with extension from the right CIA into the external iliac artery, followed by parallel stenting of the right hypogastric artery. Completion angiogram demonstrated in-line flow with a small type 2 endoleak. The patient tolerated the procedure well and was discharged home the following day on antiplatelet therapy. At one-month follow up, he denied any claudication symptoms; duplex ultrasound demonstrated a patent stent graft with resolved endoleak.

DISCUSSION: The development of advanced EVAR technology has broadened the treatment options for AAAs. Preoperative planning is essential to achieve aneurysm repair and prevent complications that can occur from stent coverage of branch vessels. Utilization of techniques such as the snorkel have improved the morbidity of EVAR and patients’ quality of life. Prior technology could be modified for anatomic variation, but newer FDA-approved devices appear to be safe and effective. In this case, we were able to successfully preserve our patient’s right hypogastric artery and avoid significant complications of arterial coverage.
Abstract #89: DELAYED PRESENTATION AND SURGICAL MANAGEMENT OF HIRSCHSPRUNG’S DISEASE
Dr. Kaily Ewing - The University of Oklahoma - Tulsa, Department of Surgery
Dr. Tiffany Wheeler - The University of Oklahoma - Tulsa, Department of Surgery
Dr. Richard Ranne - The University of Oklahoma - Tulsa, Department of Surgery

INTRODUCTION: Hirschsprung’s disease is a congenital disorder caused by lack of neuronal ganglion cells within the myenteric plexus of the colon. One hypothesis behind the pathogenesis of Hirschsprung’s relates to the method of migration of neural crest cells along the colon from proximal to distal during development. Accordingly, Hirschsprung’s begins at the anus and extends from distal to proximal at varying amounts according to the presence or absence of ganglion cells. This diagnosis is suspected with failure to pass meconium within the first 48 hours of life, prompting a surgical consult and rectal biopsy to confirm the absence of ganglion cells. The diagnosis of Hirschsprung’s is delayed past the neonatal period in approximately 10-20% of patients secondary to either very short aganglionic colonic segments or to concurrent diagnoses which confound the patient’s presentation.

CASE REPORT: A 2-month-old male presented as a direct admission with constipation, dehydration, and failure to thrive. He reportedly had normal stooling patterns in the first few days of life, however at 19 days old was hospitalized with severe colitis secondary to Clostridium difficile, which his mother and grandmother were both undergoing treatment for at the time. He now presented with one week of increasing abdominal distention and constipation. On workup the patient had signs of megacolon on abdominal x-ray, and pediatric surgery was consulted. The patient was taken to the operating room for a rectal biopsy, which revealed absence of ganglion cells on final pathology. Once the diagnosis was confirmed he underwent an exploratory laparotomy with leveling colonic biopsies to determine the extent of his disease. Ganglion cells were confirmed at the level of the mid-descending colon, and an end colostomy was created. Postoperatively the patient recovered well and experienced improved growth and nutritional status. 6 months later he underwent a Duhamel colonic pull through which involved the takedown of the previous colostomy, passage of the normal, ganglionated bowel posterior to the aganglionic rectal stump, and creation of a common channel using a surgical stapler. His postoperative course was uncomplicated and he was able to appropriately advance his diet and discharge home by postoperative day 4.

DISCUSSION: While failure to pass meconium within the first 48 hours of life is considered pathognomonic for the diagnosis of Hirschsprung’s disease, some patients may have a delayed presentation and a low threshold for rectal biopsy should maintained in young children presenting with failure to thrive and chronic constipation.
Abstract #92: INTRAOPERATIVE MANAGEMENT OF POST-MASTECTOMY LATERAL CHEST WALL DEFORMITY IN OBESE PATIENTS

Dr. Nasser Alamiri - UNIVERSITY OF OKLAHOMA - TULSA - DEPARTMENT OF SURGERY
Dr. Zakiya Shakir - UNIVERSITY OF OKLAHOMA - TULSA - DEPARTMENT OF SURGERY
Dr. Archibald Miller - UNIVERSITY OF OKLAHOMA - TULSA - DEPARTMENT OF SURGERY

INTRODUCTION: Several aesthetic subunits of the breast have been described in the literature. Obesity and excess chest wall fat are associated with development of deformities in these subunit. The lateral chest wall unit has been recognized and further divided into three aesthetic subunits: the axilla, the breast, and the chest wall. Reduction mammoplasty and breast reconstruction have also been associated with postoperative lateral chest wall deformity. We identify this as a rising problem in the United States secondary to the increasing incidence in breast cancer diagnosis, with an estimated 266,120 new cases of breast cancer in 2018.

CASE REPORT: Our patient was diagnosed with breast cancer and had a treatment plan of bilateral mastectomies with placement of tissue expanders and post-operative radiation therapy. The patient was obese and a lateral chest wall deformity was expected to occur postoperatively in the form of excess skin and fatty tissue. The patient was marked preoperatively for bilateral reduction mammoplasty with a V-Y extension of the incision at the lateral aspect into the axilla. The incision results in three skin flaps: a medial, a lateral flap, a V-Y flap. After the mastectomies were done, tissue expanders were placed in a submuscular fashion. The skin flaps were then transposed by overlapping the medial and lateral flaps to close the medial part of the incision. The V-Y flap was used to close the middle and lateral part of the incision. Absorbable suture were used to close the skin. The patient was admitted for observation and discharged the first postoperative day.

DISCUSSION: Deformities affecting different breast subunits, including the lateral chest wall, are recognized problems that affect patients undergoing breast reconstruction. This deformity can occur in patients with macromastia, breast cancer, breast asymmetry, and massive weight loss, but is more commonly seen in obese patients. Different management strategies for post-mastectomy lateral chest wall deformity have been described. However, most techniques lack specifically described implementation in obese patient with varying success rates. We describe a V-Y dermal advancement flap reconstruction technique to minimize redundant axillary tissue that can be aesthetically and functionally problematic in post-mastectomy patients.

CONCLUSION: Post-mastectomy lateral chest wall deformity in obese patients is an increasingly recognized problem. A single-stage solution at the time of mastectomy can achieve good cosmetic and functional results while reducing the number of procedures the patient would undergo.
Abstract #95: SUBCLAVIAN TO BRACHIAL ARTERY BYPASS FOR UPPER EXTREMITY LIMB SALVAGE
Dr. Adee Heiman - University of Oklahoma-Tulsa, Department of Surgery
Dr. Vernon Horst - Department of Surgery, University of Oklahoma-Tulsa
Dr. Ranan Mendelsberg - Department of Surgery, University of Oklahoma-Tulsa
Dr. Peter Nelson - The University of Oklahoma - Tulsa
Dr. Kevin Taubman - The University of Oklahoma - Tulsa, Department of Surgery

INTRODUCTION: Occlusive disease of the subclavian artery affects approximately 2% of the adult population. Although the majority of these patients are asymptomatic, clinical manifestations may include upper extremity exertional or rest pain, tissue loss, angina (E.g. coronary-subclavian steal) and syncope (E.g. vertebral-subclavian steal). While the etiology is most frequently secondary to atherosclerosis, other abnormalities have been described such as vasculitis (Takayasu's) or congenital vascular anomalies such as arteria lusora and right-sided aortic arch.

CASE REPORT: 90-year-old right-handed female presented to clinic after four months of left upper extremity rest pain and numbness. Exam revealed an absent left brachial and radial pulse, substantial diminished blood pressure in the left arm. An arterial duplex of the left upper extremity was ordered, revealing critical stenosis versus occlusion of the distal left subclavian artery and absent flow in the ulnar artery. Left upper extremity angiogram was performed demonstrating a type II bovine aortic arch configuration with complete occlusion of the distal left subclavian artery that extended through the axillary and proximal brachial arteries. Collateral vessels reconstituted flow at the distal left brachial artery. Runoff was via the left radial artery with chronic occlusion of the left ulnar artery. Due to the critical and severe nature of her pain, the decision was made to proceed with revascularization. No endovascular options were available. An anatomic bypass reconstruction between the left subclavian and left brachial arteries was created utilizing a cryopreserved femoral-popliteal artery conduit. A strong left radial pulse was noted post-operatively with substantial pain reduction. The patient was admitted post-operatively to the CVICU overnight. She was discharged on post-operative day two on statins, aspirin and clopidogrel. Two months post-bypass, her pain remains palliated with exam demonstrating a strong left brachial and radial pulse. Surveillance duplex studies reveal a patent graft without hemodynamically significant stenosis.

DISCUSSION: Here, we identify a case of clinically-significant subclavian artery stenosis in a patient with a bovine aortic arch, a congenital anomaly not previously described in association with this disease. The most commonly used procedures for treating this disease include endovascular management and bypasses originating from the carotid artery. This patient presented with more distal disease, allowing us to use the more proximal subclavian artery for inflow, with an outflow target of the mid-to-distal brachial artery. Here, we report a good outcome at two months follow-up, but further studies on this technique are needed in order to assess long-term patency rates.
Abstract #97: ENDOVASCULAR REPAIR OF A PROXIMAL COMMON CAROTID PSEUDOANEURYSM

Dr. Ranan Mendelsberg - Department of Surgery, University of Oklahoma-Tulsa
Dr. Vernon Horst - Department of Surgery, University of Oklahoma-Tulsa
Dr. Hyein Kim - Department of Surgery, University of Oklahoma-Tulsa
Dr. Kelly Kempe - Department of Surgery, University of Oklahoma-Tulsa
Dr. Kevin Taubman - The University of Oklahoma - Tulsa
Dr. Peter Nelson - The University of Oklahoma - Tulsa
Dr. Adel Barkat - Department of Surgery
Dr. John Weber - Department of Surgery

INTRODUCTION: Access site complications occur in 3.5% – 9% of patients undergoing an endovascular procedure. These can include hematomas, pseudo-aneurysms, fistula formation, dissections, and vessel thrombosis.

CASE REPORT: An 85-year-old female had a remote history of a right carotid endarterectomy and developed symptomatic re-stenosis of her patch repair. She developed a large pseudo-aneurysm after undergoing a carotid stent via a percutaneous, common carotid artery access by her cardiologist. Given the location of the pseudo-aneurysm, her co-morbid conditions and the fact that this was a re-do operative field, she was taken to the operating room and the distal, right internal carotid artery was accessed through an open exposure. A covered stent was placed across the lesion with resolution of the pseudo-aneurysm and a bare-metal stent was used to bridge across the 2 carotid stents as there was crimping of the previously deployed stent. She did well following surgery and was discharged on post-operative day 1.

DISCUSSION: Pseudoaneurysms are generally the result of trauma, arterial dissection, prior operations or prior interventions. Although commonly presenting as a pulsatile mass, they can cause embolic strokes, hemorrhage, cranial nerve dysfunction, skin necrosis or compressive symptoms with dysphagia or respiratory compromise. Treatment is always driven by the lesion location, character and size. Treatments may include exclusion, reconstruction, stenting or coil embolization. Although there have been several case studies reporting the safety of percutaneous common carotid access for stent delivery with low morbidity rates, these studies were all performed at high-volume centers. Given the vascular distribution, direct percutaneous common carotid access has a higher theoretical risk for significant morbidity. This case describes a complex common carotid pseudo-aneurysm related to a direct common carotid access. The pseudo-aneurysm was located low in the neck which would have required a sternotomy for proximal arterial control. Distal vascular control would have required going through a redo operative field, which has an increased risk of bleeding and nerve injury. Luckily, this patient had a superficial and easily accessible distal internal carotid artery. This allowed direct arterial access through an open exposure, obtaining distal cerebral protection with arterial cross-clamping. It provided enough working length to insert and deploy the necessary catheters, wires and stents and allowed the patient to undergo a complex endovascular procedure while minimizing her risk.
Abstract #99: SURGICAL TREATMENT OF COMPLEX SUBCLAVIAN VEIN STENT INFECTION WITH ANATOMIC RECONSTRUCTION
Dr. Vernon Horst - Department of Surgery, University of Oklahoma-Tulsa
Dr. Ranan Mendelsberg - Department of Surgery, University of Oklahoma-Tulsa
Dr. Kevin Taubman - Department of Surgery, University of Oklahoma-Tulsa
Dr. Hyein Kim - Department of Surgery, University of Oklahoma-Tulsa
Dr. Kelly Kempe - Department of Surgery, University of Oklahoma-Tulsa
Dr. Peter Nelson - Department of Surgery, University of Oklahoma-Tulsa

INTRODUCTION: Percutaneous transluminal angioplasty (PTA) with stent placement is often utilized to treat central venous stenosis and help prevent restenosis. Multiple case reports of bare metal stent infection are present in the literature, with no consensus for full treatment algorithm.

CASE REPORT: A 74 year old gentleman with a history of end stage renal disease (ESRD) on hemodialysis (HD) via a right upper extremity radiocephalic arteriovenous fistula (AVF), atrial fibrillation, and remote tobacco abuse presented with fevers, chills, and persistently positive blood cultures with methicillin-resistant Staphylococcus aureus (MRSA) after 11 weeks of intravenous antibiotic therapy. During this time, he had also developed right arm swelling and edema due to central venous stenosis, and PTA and bare metal stent placement was performed. Due to his persistent positive blood cultures, a CT scan was performed which revealed a phlegmon surrounding his stented subclavian vein. As he continued to fail antibiotic therapy, he was deemed to have failed non-surgical management. We performed a mini-sternotomy, right clavicular head resection, and resection of the right axillary, subclavian, and innominate veins and stents with reconstruction of the axillary-subclavian-innominate vein using cryopreserved femoral artery. The patient tolerated the procedure well and was discharged safely to a long-term acute care facility for four additional weeks of intravenous antibiotics.

DISCUSSION: Central venous stenosis is a relatively common disease in the United States, with approximately 15,000 patients per year diagnosed with occlusion of the superior vena cava (SVC) or innominate veins. While this is due to malignancy in approximately 60% of the affected population, it can also be the end result of chronic intravenous catheters or wires. Infection rates for PTA are low, and typically involve the access site. A poor index of suspicion for stent infection can lead to delayed diagnosis, as well as sepsis, limb loss, and even death. While successful sterilization with 6-9 weeks of antibiotic therapy have been reported in the medical literature, failure of medical treatment can mandate surgical resection and reconstruction. Proper data review and patient selection regarding stent placement, as well as periprocedural attention to aseptic technique, are necessary to avoid the dangerous and potentially fatal outcome of infected stents.
Abstract #100: HYBRID REPAIR OF SYMPTOMATIC INNOMINATE AND INTERNAL CAROTID ARTERY STENOSES
Dr. Vernon Horst - Department of Surgery, University of Oklahoma-Tulsa
Dr. Ranan Mendelsberg - Department of Surgery, University of Oklahoma-Tulsa
Dr. Hyein Kim - Department of Surgery, University of Oklahoma-Tulsa
Dr. Kelly Kempe - Department of Surgery, University of Oklahoma-Tulsa
Dr. Kevin Taubman - Department of Surgery, University of Oklahoma-Tulsa
Dr. Peter Nelson - Department of Surgery, University of Oklahoma-Tulsa

INTRODUCTION: Atherosclerosis is a disease of significant prevalence and a leading contributor to substantial morbidity and mortality worldwide. Hemodynamically significant (>50%) stenosis of the supraaortic trunk (innominate, left common carotid, and left subclavian arteries) occurs in approximately 2% of the general population, and in up to 15% of the population with carotid bifurcation stenosis. Innominate artery stenosis typically presents as steal syndrome or ischemia related to the right upper extremity, vertebrobasilar insufficiency, or syncope. Both endovascular and open repair options are reported.

CASE REPORT: A 77 year old female with a history of atrial fibrillation, former tobacco abuse, and right-sided cerebrovascular accident (CVA) six years prior with residual mild left weakness, presented after a transient ischemic attack (TIA) at home. Workup included a computed tomography angiogram (CTA) of the neck, which revealed 70% stenosis of the proximal innominate artery as well as 50% stenosis of the right internal carotid artery (ICA) by NASCET criteria. Due to these findings and her presenting diagnosis of TIA, we continued her statin and started her on antiplatelet therapy, and recommended surgical treatment of both her ICA and innominate lesions. We performed a right carotid eversion endarterectomy and tandem retrograde innominate artery stent with embolic protection via carotid clamping. The patient tolerated the procedure well and was discharged safely home on post-operative day two after an uneventful hospital course.

DISCUSSION: Innominate artery stenosis is often an incidental finding, but up to 30% of patients with this diagnosis require intervention. While innominate artery stenosis is seldom associated with CVA, our patient’s presentation of TIA with 50% ipsilateral ICA stenosis as well as 70% innominate artery stenosis was an indication for repair of both her carotid and innominate artery stenoses. Known complications of cerebrovascular intervention, including both endarterectomy and stenting, include CVA, bleeding, myocardial infarction (MI), and death. A literature review yielded a few small case series and a meta-analysis of this procedure with mixed results regarding perioperative CVA. In this case, we were able to safely treat our patient’s innominate and carotid stenoses and decrease her risk of CVA. Planned surveillance with carotid duplex at 1 and 6 months, followed by yearly studies, will demonstrate the long-term efficacy of our treatment.