2024

CLINICAL VIGNETTES

RESEARCH

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8:30 AM

Between Beats and Visions: A Rare Case of a Left Atrial Myxoma Masquerading as Cranial Nerve Palsy

Manuel Del Rio, Diego Mendiguren, MD; Orlando Arce, MD; Charmaine Pérez del Valle, MD

"Primary cardiac tumors are rare with a higher prevalence in women and 50% originate from the left atrium, attached to the fossa ovalis. The initial presentation of cardiac tumors may include symptoms such as breathing difficulty, chest pain, cough, palpitations, dizziness, or other non-specific manifestations like fever or general malaise. Left atrial tumors, in particular, have been reported to mimic the symptoms of mitral stenosis due to mitral valve outflow obstruction. It is essential to consider symptoms related to embolization where tumor material dislodges into systemic circulation, occurring in 30-40% of cases. If a portion of a left atrial tumor embolizes, it will most likely do so to the cerebrovascular system. Neurologic sequelae of embolization commonly manifest as facial paresis, aphasia, dysarthria, or hemiparesis. Here we present a rare case of a patient who arrives to the ER with double vision and is found with a substantial left atrial mass.

A 55 year old male patient with history of hypertension, immune thrombocytopenia purpura (ITP) and type 2 diabetes presented to the ER with symptoms of double vision, headache and dizziness for two days. Reported similar episodes eight weeks ago, which self-resolved in two days. Denied shortness of breath, chest pain, head trauma, loss of vision and reported no illicit drug use or new medications. Routine labs showed stable Hgb and thrombocytopenia within baseline. Ophthalmology evaluation revealed limited adduction, supra/infraducion suggestive for cranial nerve three palsy(CN III), and a right afferent pupillary defect. Further imaging, including head CTA, MRI, and cervical angiogram, ruled out intracranial aneurysm or vascular malformation. Cardiac echo performed revealed a moderate-sized pedunculated left atrial mass indicative of atrial myxoma. The patient was promptly started on full dose anticoagulation with enoxaparin. Transesophageal echocardiogram confirmed presence of a large 10.58cmÂ2 mass in left atrium prolapsing into left ventricle. Patient underwent cardiothoracic surgery for excision of mass. On repeat ophthalmology evaluation, patient referred complete resolve of symptoms along with resolution of diplopia and CN III palsy.

Although atrial myxomas are recognized as the most common benign heart tumor, they remain exceptionally rare. Symptomatology may vary but patients typically present with shortness of breath, syncope, or palpitations. Embolization towards cerebrovascular system can occur, leading to neurologic deficits observed in 20% of patients. The occurrence of double vision as an initial symptom caused by left atrial myxoma is exceedingly rare; however, in this case, it prompted the patient to seek medical ultimately revealing a sizable cardiac tumor. Treatment for cardiac myxomas is prompt surgical removal due to risk of embolization or sudden cardiac death. These tumors carry 2-5% recurrence rate, emphasizing the importance of postoperative follow-up echocardiogram. While post-surgical recovery is quick, patients may develop conduction abnormalities such as atrial arrythmias. Even if intracranial imaging studies are negative, patients with ophthalmologic findings should undergo close monitoring with follow up ophthalmologic exams.

8:42 AM

There is biliary duct tissue in my adrenal! A unique presentation of an Adrenal metastasis of cholangiocarcinoma-pancreatic tissue without any overt mass

Gladymar González Marrero, MD; Alexander Fret Cruz, MD; Dainamar Pérez González, MD;
Liza Vázquez, MD

"Cholangiocarcinoma (CCA) is a malignant tumor of the epithelial cells of the bile duct that occurs in the biliary tree and the liver parenchyma. Magnetic resonance imaging (MRI), in conjunction with magnetic resonance cholangiopancreatography (MRCP), have been the gold standard for diagnosing and staging CCA. During the years distinguishing metastatic adenocarcinoma from cholangiocarcinoma have proved to be challenging, since the immunohistochemical pattern typical of cholangiocarcinoma (CK7+, CK19+, CD20- as in this case) is also seen in patients with metastatic cancers of the pancreas, small bowel, and less commonly, the colon. But what happens when the gold standard for diagnosing shows normal pancreas and biliary tree, without any signs of cholangiocarcinoma?

A 44 years old woman with history of asthma, Obstructive Sleep Apnea (OSA), migraines, arterial Hypertension and bariatric surgery, without toxic habits presents to Hemato/Oncologist office after undergoing right adrenal mass resection, with pathology revealing metastatic adenocarcinoma, favoring pancreatic primary. Patient initially presented to the Emergency Room complaining of inability to void and right flank pain. MRI at that moment showed right adrenal mass 7 x 4.1 x 6.9 cm, without any masses at liver, biliary ducts or pancreas. Blood workup demonstrated adequate renal and hepatic function, no major electrolyte or acid base disturbances. She has no personal history of malignancies but family history was remarkable for Colon Cancer (father, diagnosed at age 68).

Laboratories were remarkable for LDH 184, CA 19-9:18 U/mL, CA-125:108 (weakly), (pelvic MRI only significant for hemorrhagic ovarian cyst), CEA <1.73 ng/mL, Urine catecholamines and metanephrines at normal range. Immunohistochemical (IHC) staining was positive for CK7, Villin, CK19, CA-19.9, mCEA (focal), IMP3, MUC1 (patchy), p53 (wild type), S100p and CA125. Positron Emission Tomography (PET/CT) scan was remarkable for no evidence of FDG (fluorodeoxyglyucose) avid lesions to suggest residual nor metastatic neoplastic process. CARIS genetic final report showed no mutations, but GPSa1 (genomic probability score) showed an estimated 91% of tissue to be cholangiocarcinoma. Surprisingly, MRI/MRCP were unremarkable with normal pancreas and biliary tree. Pathology revision by National Institutes of Health (NIH) revealed adrenal mass favoring pancreatobiliary neoplasm. Finally, diagnosis of metastatic cholangiocarcinoma to the right adrenal mass was given, and started chemotherapy with Gemcitabine, Cisplatin and Durvalumab.

Adrenal gland is an uncommon site for metastasis from Cholangiocarcinoma. To the best of our knowledge, this is a very rare case of adrenal metastasis from cholangiocarcinoma and pancreatic malignant cells with such an atypical presentation where no primary tumor was found on imaging test. With this case we aim to raise awareness about the unusual ways CCA can present. Also, we look to highlight the importance of providing adjuvant therapy despite not having a specific primary site of malignancy, even resection of adrenal was performed, to increase chances of survival and decrease risk of recurrence.

8:54 AM

Pontine hemorrhagic stroke in a patient with CADASIL and Atrial Fibrillation.

Leanette Guzman Rivera, MD; Karen Nieves González, MD; Myriam I. García González, MD; Milton D. Carrero Quiñones, MD, FACP, PD

Cerebral Autosomal Dominant Arteriopathy with Subcortical Infarcts and Leukoencephalopathy (CADASIL) is a rare inherited cause of stroke in adults. It typically presents as lacunar infarcts, but in 25-70% of CADASIL patients presents with cerebral microhemorrhages. It is diagnosed through a combination of positive family history of stroke, dementia and migraine, concomitantly with suggestive clinical and neuro-imaging features. It is confirmed by genetic testing with documentation of NOTCH3 pathogenic variant. There is no cure for CADASIL, thus management is focused on secondary stroke prevention.

This report discusses the case of 62 year old male patient with past medical history of CADASIL (diagnosed by his neurologist), arterial hypertension, hyperlipidemia, peripheral neuropathy, hemorrhagic cerebrovascular accidents and atrial fibrillation (currently on anticoagulation with Xarelto since a year ago), who came to the emergency department due to right hand and foot numbness & weakness, that was accompanied by right leg heaviness. The patient referred previous episode in the past of same presentation. Also, a family history of having several mother's side members with stroke at a young age. He refer having cognitive difficulties in the past years as consequence of previous stokes, as dysarthria and tremors. Denied dysphagia, dysarthria, shortness of breath, chest pain, palpitations, dizziness, loss of consciousness or fever. Upon arrival to the emergency department, his vital signs were within normal limits with exception of high blood pressure of 137/82mmgh. On physical examination, patient presented with right hand muscle weakness. His National Institutes of Health Stroke Scale (NIHSS) score was 0, CHADVASC Score was 3 and HASBLED score was 3. Patient at need of anticoagulation for ischemic stroke prevention secondary to atrial fibrillation, but with high risk for major bleeding. Computed tomography scan of the head showed a small pontine hemorrhagic stroke. Magnetic resonance imaging of the brain showed numerous foci of blooming magnetic susceptibility within the brainstem, infra-tentorial and supra-tentorial brain which favored to represent sequelae of previous micro hemorrhages, hemorrhagic cavernous or a combination and to consider hypertensive micro-hemorrhage as as possible causative agent. Due to hemorrhagic stroke, anticoagulation for atrial fibrillation was discontinued as recommended by cardiologist and neurologist. Tight blood pressure control was achieved with optimization of antihypertensives, with goal pressure <140/80mmgh. Statin therapy was also started. The patient was given physical therapy for his new neurologic findings and was discharged home with aspirin to be started 2 weeks after the acute event.

This case shows the complexity of the management of this rare disease and patient's comorbidities, outweighing the patient's risk of worsening or developing new hemorrhagic stroke versus new ischemic stroke secondary to either CADASIL and Atrial Fibrillation. "

9:06 AM

Alternative Passage: Arterio-Dural Fistula as a Complication of Chronic Cerebral Venous Thrombosis

Keishla Jiménez-Ortega; Jiménez, Hiram, MD; Carmona-Casillas, Alejandro, MD; Arraut, Juan MD

Dural arteriovenous fistulas (dAVF) are uncommon vascular malformations characterized by abnormal connections between dural arteries and adjacent blood vessels. These fistulas account for only 10%–15% of intracranial vascular malformations. The most common locations of dAVFs are the sigmoid, transverse, and cavernous sinuses. Cerebral venous thrombosis (CVT), a rare neurologic condition with an incidence rate of approximately 1.32 per 100,000 person-years hs been associated with dAVFs. While some studies suggest that CVT can initiate the development of dAVF, it is also possible for a dAV to cause CVT. In some cases, dAVFs may precede CVT, especially when they exhibit spontaneous occlusion. The presence of a dAVF in the setting of CVT can be life-threatening, as it may lead to total occlusion of blood vessels, resulting in edema and compression of intracranial structures, potentially causing permanent neurological damage.

A 57-year-old male with history of diabetes with associated retinopathy, was diagnosed on 2023 with left transverse sinus thrombus of unknown etiology and intracranial hypertension on therapy with apixaban and acetazolamide. He presented to the emergency department with progressively worsening visual acuity and optic nerve swelling, despite compliance with medication. He was initially admitted for optic fenestration. Initial laboratory results were unremarkable. Physical examination revealed decreased visual acuity: 20/100 // 20/200 with pupils equally round and very sluggishly reactive to light. MRV showed focal segmental irregularities along the lumen of the most posterior aspect of the superior sagittal sinus indicative of underlying minimal thrombi, most likely due to chronic thrombi, with no significant change from previous MRV the previous year. Additionally, DSA yielded an occipital arteriovenous fistula with feeders coming from both occipital arteries with external carotid arteries injection along with bilateral posterior cerebral arteries and middle cerebral arteries with venous drainage by the transverse-sigmoid junction. In light of these findings, the patient was scheduled for embolization, and anticoagulation therapy was discontinued due to the contraindication in the presence of a dural fistula.

This case illustrates the complex relationship between CVT and dAVFs, as the patient was initially diagnosed with CVT, and later, follow-up imaging revealed chronic CVT with an associated dural AV fistula. This highlights the critical importance of long-term follow-up imaging in patients with CVT, as well as the potential complications arising from the coexistence of these two pathologies.

Recent evidence supports the hypothesis of a bidirectional association between the 2 diseases. However, follow-up imaging not yet established as a standard protocol. As a physicians we have to take into a count that while we are treating for cerebral thrombosis with full dose anticoagulation patient can have a dAVF fistula which is contraindicated. It is important to encourage patients to adhere to follow-up appointments and to seek medical advice if symptoms persist, as they may be presenting with a dAVF, which necessitates surgical management.

9:18 AM

Beyond Respiratory Symptoms: Identifying Mycoplasma-Associated Vasculitis and Myocarditis

Harjeet Kaur, MD

Mycoplasma pneumoniae is a well-recognized pathogen primarily associated with respiratory tract infections. It has also been implicated in a range of extra-pulmonary manifestations. Complications of this infection are unusal; in particular cardiac and skin involvement is very rare. The overlap in symptoms with other infections, such as bacterial endocarditis or septic vasculitis, complicates the clinical picture. Herein we report a case of vasculitis and endocarditis caused by Mycoplasm Pneumoniae.

Case Presentation: A previously healthy 23-year-old male came to the emergency room complaining of abdominal pain, chest pain, vomiting and worsening skin eruption over his legs. His symptoms started three days before presenting to the Emergency room. He denied headache, cough and sore throat. He first noticed the rash on both feet which ascended towards his legs. During evaluation his vital signs were as follows: temperature: 38.6 C; heart rate: 118 beats/min; blood pressure: 67/35 mmHg; and respiratory rate: 16 breaths/min. His oxygen saturation was 99% on room air. There were no oral, mucosal, or conjunctival lesions. The lungs were clear to auscultation bilaterally. There were scattered erythematous and petechial and purpuric lesions over the anterior aspect of his legs and plantar surface of his feet. There was some fluid filled bullae on his ankles but no desquamation of skin was observed. Laboratory studies included a complete blood count and serum chemistry values, which were unremarkable except for mild leukocytosis 16.8 × 109/l. Tropnins levels evelation without EKG changes. Mycoplasma Pneumoniae IgM was positive. Given his presentation further serology testing was pursued which was as follows: Covid-19 negative, Influenza antigen negative, Mycoplasma IgM was positive. Urine drug test was positive for cocaine. Given the patient's presentation with skin lesions, fever and chest pain, multiple differential diagnosis including infective endocarditis, sexually transmitted disease and vasculitis were considered. The patient was empirically treated with intravenous (IV) vancomycin, IV azithromycin and IV methylprednisolone. His echocardiogram showed preserved ejection fraction and without pericardial effusions or vegetations. His blood cultures obtained on admission showed no growth. The antibiotic regimen was changed to IV azithromycin. Over the hospital course, the patient's symptoms improved on antibiotics and steroids.

Conclusion: Mycoplasma pneumoniae can cause many extrapulmonary manifestations even without pulmonary symptoms. This case brings forth uncommon manifestation of mycoplasma infection with vasculitis and endocarditis. The presentation of cutaneous lesion and cardiac symptoms may overlap with other conditions like vasculitis and infectious conditions ,as it was in this case. Therefore, a thorough clinical evaluation and workup is required to accurately diagnose the condition. It is possible that many of these cases go through a benign subclinical course and remain undetected. However, in some cases, the prognosis can be grave. Thus, there is a need for a high index of suspicion for mycoplasma infections and to manage them appropriately in the early stages.

10:00 AM

A Rare Confluence: Post-Viral Pneumonia and Immune Reconstitution Inflammatory Syndrome in a Newly Diagnosed HIV Patient

Belissa López, MD; Danielle Pérez-Zamora, MD; Mariela Ginés, MD; Antonio Raimundi, MD; Sherley Rosa, MD; Maria Pérez, MD; Joel Nieves, MD; José Gutiérrez, MD

Immune Reconstitution Inflammatory Syndrome (IRIS) is a paradoxical inflammatory response following the initiation of antiretroviral therapy (ART) in patients with significant immunosuppression, such as those with advanced HIV. The overall incidence of IRIS remains unclear, though it is estimated that 25% to 30% of HIV patients on ART may develop this condition. IRIS can manifest in various forms, often complicating the clinical picture by exacerbating pre-existing infections or unmasking occult ones. This case report highlights the complexities managing a recently diagnosed HIV patient with post-viral Methicillin-Sensitive Staphylococcus aureus (MSSA) pneumonia with a cavitary lesion that was complicated with IRIS following ART initiation.

We present a 30-year-old male that was diagnosed with HIV and secondary syphilis, two weeks prior to admission. The patient initially presented with general malaise, unquantified fever, progressive fatigue, dry cough, and significant weight loss of 21 lbs over two months, prior initiating HIV treatment with Symtuza—a combination of cobicistat, darunavir, emtricitabine, and tenofovir alafenamide. Despite ART therapy for two weeks, the patient experienced worsening of symptoms, including increased respiratory distress that urged an emergency room visit.

A CT thorax revealed bilateral extensive ground-glass opacities and a cavitary lesion in the right upper lobe, measuring 2.5 cm by 3.1 cm. Inflammatory markers, including Q-CRP, procalcitonin, and ESR, were ordered alongside PPD, HIV viral load, CD4 count, and sputum cultures to rule out common causes of cavitary lesions. Given his clinical presentation and imaging findings, he was admitted with a presumptive diagnosis of Pneumocystis jirovecii pneumonia (PJP) and started on trimethoprim-sulfamethoxazole (2 tabs TID), piperacillin-tazobactam (4.5g q6hrs), doxycycline (100mg BID), and Nystatin oral wash (TID) for oral candidiasis. On the second day of admission, his condition worsened, with significant changes on chest X-ray and mild hypoxemia.

Pulmonary service was consulted, and a bronchoscopy with bronchoalveolar lavage (BAL) was performed. Samples were analyzed with PAS stain, Grocott methenamine silver stain, acid-fast bacilli (AFB) staining, and bronchial washing cultures. BAL cytopathology was negative for PJP and mycobacteria. Based on BAL cultures growing Methicillin-Sensitive Staphylococcus aureus (MSSA), his antibiotic regimen was adjusted to Cephalexin (500 mg q8hr). Following the antibiotic adjustment, his respiratory symptoms significantly improved. His oxygen saturation remained above 95% on room air and was discharged to complete a 14-day course of Cephalexin. At two-week follow-up, his chest X-ray showed resolution of previous findings.

This case underscores the challenges of distinguishing symptoms between IRIS and other infections in HIV patients with low CD4 count, such as bacterial pneumonia and tuberculosis. The primary challenge in this case was differentiating between an active infection and IRIS, as both can present with similar clinical and radiological findings. The treatment strategy required balancing the need to control the active infection with managing the inflammatory response associated with IRIS. Clinicians should maintain a high index of suspicion for post-viral MSSA pneumonia in HIV/AIDS patients, particularly when complicated by IRIS following ART initiation.

10:12 AM

Unveiling an Extremely Rare Cerebellar Tumor in a Patient with Frequent Falls and Dizziness: A Case Study from Southern Puerto Rico

Wilcar Otero-Morales, MD; Myrna Milán Ortíz, MD; Abner Limardo Irizarry, MD; Remy Rodríguez Chardón, MD; Gisela Feliciano Díaz, MD

Lhermitte-Duclos disease (LDD), or dysplastic cerebellar gangliocytoma, is an exceptionally rare cerebellar tumor characterized by abnormal cerebellar development and localized enlargement. The precise etiology remains uncertain, although germline mutations in the PTEN tumor suppressor gene have been implicated. It is frequently associated with Cowden syndrome, another condition caused by PTEN mutations, which significantly increases the risk of various malignancies. LDD typically presents in individuals in their third or fourth decade of life, and manifests with symptoms related to mass effect in the posterior fossa and increased intracranial pressure, including nausea, vomiting, and ataxia. Diagnosis is confirmed via magnetic resonance imaging (MRI) and genetic testing, and treatment generally involves surgical intervention.

This case study describes a 75-year-old Hispanic woman with a medical history of diabetes, hypertension, and osteoarthritis, who presented with recent onset of slurred speech, ataxia and recurrent falls. Symptoms associated with right temporal pressure-like headaches, dizziness, nausea, emesis, generalized weakness, and unintentional weight loss over the past three weeks. Despite normal vital signs, physical examination revealed ataxia, diminished strength in the right lower extremity, gait instability, and negative Kernig's and Brudzinski's signs. Initial laboratory tests were unremarkable. Non-contrast head CT scan showed no acute intracranial lesions. However, Brain MRI identified hyperintense T2 signals in both cerebellar hemispheres, with post-gadolinium images showing diffuse enhancement and a striated pattern indicative of dysplastic cerebellar gangliocytoma. Systemic evaluation for Cowden syndrome yielded no significant findings. The patient was started on intravenous steroids, resulting in significant symptomatic improvement. Consequently, follow-up and further evaluation by neurosurgery and hematology oncology were coordinated, and oral steroids were prescribed. Further imaging, including a PET scan, is planned.

LDD is a rare cerebellar pathology historically associated with poor outcomes, though advances in medical technology have improved prognosis. The disease is characterized by disrupted cerebellar cortical architecture and focal folial thickening, presenting with symptoms such as headache, ataxia, and cranial nerve palsies, often due to mass effect and increased intracranial pressure. MRI typically reveals hyperintense lesions on T2-weighted images with a striated appearance. Surgical excision remains the definitive treatment, though complete removal can be challenging due to tumor blending with normal brain tissue. The strong association with Cowden syndrome marked by a high incidence of systemic malignancies underscores the need for thorough clinical evaluation to identify or rule out coexisting conditions. In this case, while no Cowden syndrome-related findings were observed, further screening is planned.

Lhermitte-Duclos disease is a rare cerebellar tumor that can present at any age and has a significant association with Cowden syndrome. Accurate diagnosis through MRI and genetic testing is crucial, and surgical excision is the primary treatment. Continued monitoring is essential due to the potential for recurrence and associated malignancies. This case highlights the importance of early diagnosis and thorough investigation in managing rare cerebellar tumors and their associated syndromes.

10:24 AM

From Brain to Heart, When Moyamoya Strikes: A Rare Case Presentation

Kimberly Pagán, MD; Luis Acevedo-Soto,MD; Karla Vélez- Rivera, MD; Héctor Martínez- González, MD, FACC; Freddy Madera- Soriano, MD, FACS

Moyamoya disease is a progressive steno- occlusive intracranial angiopathy, causing the development of small- vessel collaterals. This uncommon disorder is typically found in the Japanese population and may cause systemic involvement. Coronary artery disease in patients with moyamoya has been reported, but statistics involving the prevalence of symptomatic coronary heart disease is lacking.

This case involves a 52- year-old Hispanic male with medical history of idiopathic moyamoya disease with bilateral bypass of the circle of Willis at the age of twenty-five and essential hypertension who presents to the emergency department of our hospital with chest pain. Chest pain was described as oppressive in nature, with moderate intensity and localized in the epigastric region. Associated symptoms include shortness of breath with minimal exertion. Physical examination was unremarkable and framingham criteria was negative. Electrocardiogram was significant for normal sinus rhythm, normal axis deviation and ST segment depressions in the limb leads II, III, aVF, and in the precordial leads V4-V6. Cardiac enzymes were negative. Given TIMI score of 3 points, invasive coronary angiography was performed by Interventional Cardiologist. Three vessel coronary artery disease was reported including the LAD 90% proximal plaque stenosis and mid segment 90% stenosis; D1 100% occluded filling via collaterals, LCFX OM1 100% occluded filling via L-L collaterals and mid segment 80% stenosis and RCA non-dominant vessel mid segment 90% stenosis. Left ventriculogram remarkable for an ejection fraction of 40-45% with antero-apical hypokinesia. Cardiothoracic surgery was consulted and coronary bypass graft was performed successfully and tolerated adequately. Patient was discharged home for further rehabilitation.

Moyamoya disease is well known to be associated with extracranial cardiovascular diseases, however coronary artery involvement has been reported, but not well documented. This rare presentation of a middle-aged Hispanic male with moyamoya disease demonstrates the possible relationship that may be presented with symptomatic coronary heart disease. As primary care physicians it is important to raise awareness of the possible cardiovascular complications this disease may present.

10:36 AM

Complexity in Disseminated Mpox Infection: A Case Report Highlighting Multisystem Involvement

Maria Pestaña-Rodríguez, MD; Laguna, N, MD; Marcano, J, MD; Soto, F, MD; Hernández, R, MD; Vera, C, MD; González, R, MD; Nieves, J MD

Mpox, previously known as monkeypox, is an infectious disease caused by the Monkeypox virus. It typically presents with fever, chills, and a rash that begins on the face and spreads to other parts of the body, such as the trunk, extremities (including palms and soles), and genitalia. The rash features firm, well-defined lesions with central umbilication, evolving from macules to papules, then to vesicles and pustules. The virus is transmitted from person to person through direct contact with the lesions. While symptoms generally resolve within two to four weeks, they can be prolonged and more severe in immunocompromised individuals, as seen in our patient.

A 47-year-old male with a medical history of genital herpes, psoriatic arthritis, and drug-induced lupus, presented to the emergency department with painful, papular lesions throughout his body, along with fever, chills, and odynophagia. The first lesion appeared on his nose and spread to his trunk, extremities, and genitals. He was previously evaluated by a dermatologist who performed a biopsy and prescribed topical ointments without improvement. He was also receiving prednisone and tofacitinib for psoriatic arthritis. The patient was in a monogamous relationship and practiced unprotected male-to-male sexual contact. He denied having similar skin lesions in the past, recent travels, exposure to animals, spelunking, shortness of breath, conjunctivitis, urethral discharge, or diarrhea. Physical examination revealed tachycardia, oral thrush, oral ulcers, and diffusely scattered painful, umbilicated papules with an erythematous rim on the head, neck, trunk, extremities, and genitalia, as well as plantar and palmar desquamative lesions. The patient underwent an extensive infectious workup and a biopsy of the lesions. He was diagnosed with disseminated Mpox infection, confirmed by biopsy and PCR. As the patient was with persistent odynophagia, he was evaluated by an ENT specialist, who also identified laryngeal and vocal cord Mpox lesions. He was treated with Tecovirimat, a novel antiviral drug FDA-approved for smallpox and currently under investigation for Mpox. During the hospitalization, he was also diagnosed with secondary syphilis, esophageal candidiasis, and HIV/AIDS. Consequently, he was started on intramuscular penicillin, fluconazole, and antiretroviral therapy, as well as empirical broad-spectrum antibiotics, due to concerns about a superimposed bacterial infection. Several days into the hospitalization, the patient developed a depressed neurological state requiring intubation for airway protection, acute kidney injury necessitating hemodialysis, acute liver failure, and later septic shock due to a bloodstream infection with Acinetobacter baumannii. Despite treatment with broad-spectrum antibiotics and supportive measures, the patient unfortunately died.

This case underscores the complexity of Mpox infection in an immunocompromised patient with untreated HIV/AIDS and steroid therapy. The CDC notes that severe Mpox manifestations, such as ocular lesions, neurological complications, myopericarditis, mucosal lesions, and uncontrolled viral spread, are more likely in immunocompromised individuals, such as our patient. This case highlights the urgent need to address gaps in the current understanding of Mpox treatment, particularly in light of the recent outbreak, and calls for further research to improve outcomes in similar high-risk populations.

10:48 AM

Coexisting Post-infectious Glomerulonephritis and Diabetic Nephropathy in A Type 1 Diabetic Patient

Edwin Soto-Velázquez, MD; Bryan L. Pagán Rivera, MD

Post-infectious glomerulonephritis is an immunologically mediated glomerular injury caused by an infection. While the exact incidence of post-infectious glomerulonephritis remains unknown, it is recognized as a rare cause of glomerulonephritis in adults. Nevertheless, a higher number of patients with diabetic nephropathy may develop post-infectious glomerulonephritis compared to the general population. Diabetic nephropathy occurs in up to 30% of patients with type 1 diabetes mellitus. We report the case of a female with long-standing type 1 diabetes mellitus and proteinuria in the nephrotic range after a recent scalp abscess.

A 27-year-old female with hypertension, type 1 diabetes mellitus, and recently diagnosed chronic kidney disease stage G3a arrives due to bilateral periorbital and lower extremity edema of 3 days of evolution. Additionally, she reports that she has developed a continuously growing skin abscess on her scalp for the past three weeks. Vital signs of the patient show uncontrolled hypertension with blood pressure averaging 150/90 mmHg. Physical examination revealed orbital swelling, +2 pitting edema in the lower extremities, and a 2.9 x 2.1 x 0.5 cm scalp abscess with purulent exudate. Laboratory results showed that the patient had an elevated creatinine of 2.05 mg/dL, azotemia of 40 mg/dL, and hyperglycemia of 250 g/dL. On urinalysis, the patient had nephrotic range proteinuria with an estimated 8.9 g/day, which is why she was given IV corticosteroid therapy for five days. Additionally, the patient underwent incision and drainage of the abscess and received Cefazolin IV antibiotic therapy for five days. The ANA test, anti-GBM, and complement levels of C3 and C4 were found to be normal parameters.

This patient arrived with nephrotic range proteinuria and symptoms suggestive of nephrotic syndrome. While diabetic nephropathy was in the differential diagnosis, minimal change disease and other etiologies were considered due to the high level of proteinuria. The patient underwent an ultrasound-guided renal cortical biopsy for further characterization of the nephrotic disease. On renal biopsy, she was found with diabetic nephropathy RSP class III with superimposed post-infectious glomerulonephritis. The wound culture results from the skin abscess grew methicillin-sensitive staphylococcus aureus sensitive to the IV antibiotic regimen. The patient's renal function improved after IV diuresis, glucocorticoid therapy, antibiotic therapy, optimized blood pressure, and glycemic control with insulin therapy. This led to a decrease in proteinuria to 175 mg/day and improved her symptoms. She was discharged home with a follow-up appointment with a nephrologist and a primary care physician.

Timely diagnosis of coexisting nephrotic diseases can significantly impact outcomes. Up to a third of diabetic patients are at risk of developing diabetic nephropathy, and in rare instances, they can develop a superimposed glomerulonephritis, such as in this patient. While rare, this case underscores the importance of recognizing the potential for superimposed post-infectious glomerulonephritis in patients with diabetic nephropathy and how to manage it effectively.

CLINICAL VIGNETTES ABSTRACTS			
POSTER	**AUTHOR**	**PROGRAM**	**TITLE**
CV-01	Adrián Chico Moya	VA Caribbean Healthcare System, San Juan	Silent Threat: Zenker's Diverticulum Masquerading as Severe Aspiration Pneumonia
CV-02	Adriel González Rivera	UPR School of Medicine, San Juan	Histoplasma's Return: What can be done? A case report of Relapsed Disseminated Histoplasmosis in a Patient with Congenital HIV
CV-03	Alejandro Carmona	UPR School of Medicine, San Juan	M&M's: Methamphetamines as a Cause of Methemoglobinemia
CV-04	Alejandro Carmona	UPR School of Medicine, San Juan	Unintended Passage: Trapped Lung following Toothbrush Ingestion
CV-05	Amanda Alvelo	San Juan City Hospital, San Juan	"Inflammation Overload: COVID-19-Induced Severe Pancreatitis, DKA, and Overlapping HHS"
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CV-01

Silent Threat: Zenker's Diverticulum Masquerading as Severe Aspiration Pneumonia.

Adrián Chico-Moya, MD; José Martin-Ortiz, MD; Gretchen Ríos-Grant, MD

Oropharyngeal dysphagia is defined as difficulty of transferring food from the mouth into the pharynx and esophagus to initiate the involuntary swallowing process. The consequences of oropharyngeal dysphagia can be severe; dehydration, malnutrition, aspiration, choking, pneumonia, and death. A rare cause of this condition is Zenker's diverticulum (ZD) which shows an annual incidence of 2 per 100,000 per year in UK. It is defined as an out-pouching of the mucosa through Killian's triangle, an area of muscular weakness between the transverse fibers of the cricopharyngeal and the oblique fibers of the lower inferior constrictor muscle. It is male predominant and typically seen in middle-aged adults and older adults in their seventh decade of life. In this case, we reported a ZD-induced oropharyngeal dysphagia complicated with aspiration pneumonia.

Case of 96-year-old male with no medical history of neurocognitive disorder nor cerebrovascular ischemic event, that presented to Emergency Department with a 3-day evolution of an acute productive cough, shortness of breath and quantified fever. Further interview remarkable for history of progressive solid-predominant dysphagia associated to undigested food regurgitation, halitosis, weight loss and choking episodes since few months prior to evaluation. Initial vital signs and labs concerning for underlying infectious event. Physical exam without neck palpable mass. Imaging demonstrated right basilar lung opacity. Patient was admitted with diagnosis of oropharyngeal dysphagia and severe sepsis secondary to pneumonia with high risk for aspiration for further investigation. Diagnostic barium swallow showed a large left posterolateral outpouching at the cervical esophagus with significant retention of contrast material into this pouch prior to emptying into the thoracic esophagus which is compatible with Zenker's diverticulum. General Surgery and Gastroenterology services got to evaluate case who both recommended speech and swallow evaluation otherwise, deemed no imminent intervention. Given his progressive sepsis-related multiple organ failure in context of severe oropharyngeal dysphagia, goals of care were reassessed with patient and family members multiple times which opted for hospice care.

ZD should be suspected in middle age or older adults with progressive oropharyngeal dysphagia (usually to solids and liquids) or regurgitation of undigested food debris. The diagnosis of ZD is made on barium swallow examination. Small diverticula can be asymptomatic however, when the pharyngeal sac becomes large enough to retain contents such as mucus, pills, sputum, and food, the patient may complain of halitosis, gurgling in the throat, appearance of a mass in the neck, or regurgitation of food into the mouth. Complications of ZD include aspiration pneumonia, ulceration, and bleeding due to retained medication, fistula between the diverticulum and trachea lumen formation, vocal cord paralysis, and in rare cases, squamous cell carcinoma of the esophagus.

CV-02

HISTOPLASMA'S RETURN, WHAT CAN BE DONE? A CASE REPORT OF RELAPSED DISSEMINATED HISTOPLASMOSIS IN A PATIENT WITH CONGENITAL HIV

Adriel González-Rivera, MD; José Arias-Breton, MD; Juan C Santiago-González, MD

Histoplasmosis, caused by the dimorphic fungus Histoplasma capsulatum, is endemic in North, Central, and South America, as well as the Caribbean, including Puerto Rico. It has the potential to affect any organ in the body, and the confirmation through microscopic demonstration or isolation in extrapulmonary sites serves as evidence of dissemination, manifestation most commonly seen in immunocompromised patients. Common symptoms of dissemination encompass fever, malaise, fatigue, weight loss, cough, and dyspnea. Due to its low incidence, diagnosing disseminated histoplasmosis requires a high level of suspicion and the use of appropriate diagnostic tests. Here we present a case of a patient with recurrent episodes of disseminated histoplasmosis.

A 28-year-old male with congenital HIV and recurrent disseminated histoplasmosis presented to the emergency department with one-week history of left maxillary pain. He described the pain as constant, pressure-like, with irradiation to the left temporal area, and 8/10 intensity that improved mildly with Tylenol and Percocet. Associated symptoms included malodorous nose secretions, nauseas, subjective fever, dry cough, and a weight loss of 35 pounds in recent months. The patient acknowledged, non-compliance with his antiretroviral therapy (ART). Upon evaluation, the patient was hemodynamically stable. Physical examination was remarkable for hypo nasal speech, saddle nose deformity, mid-facial deformity, and absent hard and soft palate. Laboratories were remarkable for pancytopenia, characterized by a white blood cell count of 1.94 Thou/uL, absolute lymphocytic count of 440 cells/mm3, absolute neutrophil count of 1,069 cells/uL, an erythrocyte sedimentation rate in 111mm/h and C-reactive peptide level of 9.9 mg/L. Maxillofacial computed tomography with and without intravenous contrast revealed mucosal opacification in the left frontal and bilateral ethmoidal, maxillary, and sphenoidal sinuses. Furthermore, erosive changes were noted in the maxillary sinuses, hard palate, and nasopharynx. However, both chest x-ray and abdominal ultrasound were unremarkable. The patient was admitted under the clinical impression of disseminated histoplasmosis relapse. Consultation with infectious disease (ID) services led to the initiation of ART, itraconazole, and atovaquone. Subsequent workup revealed an absolute CD4 count < 20L, HIV-1 RNA 100,000 copies, and positive Histoplasma urine antigen. The patient was discharged with follow-up appointments in ID, HIV, and internist clinics, along with comprehensive instructions emphasizing the critical importance of long-term compliance with ART, Itraconazole, and Atovaquone therapy to avoid relapse.

Treatment of moderate to severe disseminated histoplasmosis consists of induction therapy with liposomal amphotericin B for a minimum of two weeks, followed by maintenance therapy with Itraconazole. In the case of patients with HIV, they must adhere to both maintenance therapy and Antiretroviral Therapy (ART), as nonadherence is a significant predictor of relapse. In the case presented, our patient has experienced a fourth relapse in nine years, all attributable to noncompliance with therapy These findings underscore the vital role of primary care providers in identifying and addressing social, economic, psychological, or other factors that may impede medication adherence. Addressing these factors is essential in reducing morbidity and mortality associated with conditions that require long-term treatment such as disseminated histoplasmosis.

CV-03

M&M's: Methamphetamines as a cause of Methemoglobinemia

Alejandro Carmona, MD; Carlos Ayala, MD; Cecilia Soler, MD; Natalia Laguna, MD; José Colón, MD

Methemoglobinemia is a disorder characterized by a change in the conformation of hemoglobin when Ferrous is converted into Ferric through oxidation, which impairs its ability to carry and transport oxygen. Symptomatology ranges from cyanosis, fatigue and headache to life-threatening illness such as metabolic acidosis, dysrhythmia, central nervous system depression and death. Methemoglobinemia can be either hereditary or acquired through exposure to certain medications, foods, chemicals, or environmental substances. Some common causes include lidocaine, nitroglycerine, sulfonamides, mushrooms, anti-freeze, nitrites, and hydrogen peroxide.

A 34-year-old male without a significant medical history presented to the ER due to bluish discoloration of the fingers and his lips. The patient was in his usual state of well-being after traveling from Europe until several hours before the event when he claimed to have smoked methamphetamine for recreational use. Upon waking in the middle of the night, he noticed his fingers and lips were bluish and measured an oxygen saturation of 75% at home, prompting an urgent visit to the hospital. On physical examination, he was found to be hemodynamically stable with a peripheral saturation of 82% at room air with cyanosis of the fingers and oral mucosa without symptoms of shortness of breath, fatigue, headache, dyspnea on exertion or respiratory symptoms whatsoever. Arterial blood gas was obtained after oxygen supplementation revealed hyperoxia. A CT angiogram of the pulmonary arteries was performed due to recent travel and a prolonged flight, ruling out pulmonary embolism. Due to recent use of methamphetamine, a substance that could contain nitrites, methemoglobinemia was considered. Although a qualitative test for methemoglobin yielded a negative result, due to the unavailability of prompt testing, the patient was treated with a non-rebreather mask providing 100% FiO2 to aid with oxygenation and was progressively weaned off as the patient tolerated. Methylene blue therapy was deferred due to the patient presenting without symptoms of severity that improved with oxygen supplementation and the unavailability of the methemoglobin quantitative test; it was deemed that the risks outweighed the benefits in this particular case. Fortunately, he responded well to therapy and was able to be discharged home completely asymptomatic.

Methemoglobinemia is a rare condition that is either hereditary or acquired from a spectra of drugs, foods, or easily accessible products. This case highlights the potential for methemoglobinemia from methamphetamine use, especially given the unknown composition of non-medical grade methamphetamine, which may contain nitrite products. We exhort clinicians to take into consideration methemoglobinemia in patients with history of methamphetamine use and symptoms of desaturation since early detection and prompt treatment may prevent catastrophic outcomes in this patient population.

CV-04

Unintended Passage: Trapped Lung following Toothbrush Ingestion

Alejandro Carmona, MD; Keishla Jiménez, MD; Jamil Abou El Hossen, MD; Cecilia Soler, MD; Nicole Rassi, MD

Trapped lung is a rare cause of benign pleural effusion, chronic or acute, caused by fibrinous or granulomatous tissue built in the pleural space. This results in the lung's inability to expand in the thoracic space adequately. It typically arises from inadequately treated parapneumonic effusions, cardiac surgery, trauma, or inflammatory processes involving the pleural space. A diagnosis can only be confirmed once all inflammatory, obstructive, or offending agents have been resolved and the patient is unable to expand the lung and is determined to have a trapped lung. The only treatment for this condition, unfortunately, is surgical decortication.

A 37-year-old male nursing home resident with a past medical history of schizophrenia presented to the emergency room due to hypoactivity and diaphoresis for the past 2 days. The patient had a choking spell a week prior that seemed to resolve spontaneously, allowing him to continue with his daily living activities. Examination revealed a toxic-appearing and tachycardic patient with decreased breath sounds over the left pulmonary field. Laboratory findings were remarkable for leukocytosis with neutrophilic predominance. Chest CT scan identified a toothbrush that perforated the anterosuperior aspect of the gastric body and medial anterior aspect of the left hemi diaphragm extending into the left pleural cavity with hydropneumothorax and abuts in the anterior 4th rib causing osteomyelitis. He underwent chest tube placement for draining of pleural purulent content. Patient also underwent an exploratory laparotomy for foreign body removal followed by a gastropleural fistula takedown. He was provided with Ied with IV antibiotics with vancomycin and cefepime for his pulmonary and osseous infectious process. After the patient was stabilized from his surgical and infectious processes, follow-up imaging showed persistent pneumothorax despite chest tubes not draining with persistent lung collapse. After chest tube removal the patient remained asymptomatic but persistent collapsed lung with a suspicion for lung entrapment. He was then discharged to his nursing home to complete antibiotic therapy for his rib osteomyelitis.

This case highlights the unusual and severe consequences of an unwitnessed toothbrush ingestion in a schizophrenic patient, leading to the perforation of the stomach and diaphragm, and the formation of a gastropleural fistula. The resultant exchange of pleural and gastric contents caused atelectasis that did not resolve after seemingly adequate management. This raises the question that the patient may have gone chemical pleurodesis from his own acidic gastric contents resulting in fibrosis and permanent collapse ultimately ensuing in a trapped lung.

CV-05

"Inflammation Overload: COVID-19-Induced Severe Pancreatitis, DKA, and overlapping HHS"

Amanda Alvelo, MD; Edlinn Gener, MD; Sharon Vélez, MD

Patients with diabetes mellitus can experience worse outcomes when infected with COVID-19, leading to increased hospital admissions and mortality. Similar to other infections, the virus can precipitate hyperglycemic emergencies such as diabetic ketoacidosis (DKA) and hyperglycemic hyperosmolar state (HHS) in individuals with diabetes mellitus. While SARS-CoV-2 primarily affects the respiratory system, it can also involve other systems. Gastrointestinal and hepatic involvement, among others, have been recognized and are mediated by the expression of angiotensin-converting enzyme 2 (ACE2) on the gastrointestinal tract, which is the main receptor for SARS-CoV-2. We describe a case of a 40-year-old man who initially presented with signs of diabetes mellitus, including severe DKA combined with HHS, and fulminant pancreatitis secondary to a viral prodromal systemic infection of COVID-19.

A 40-year-old male patient with no known past medical history presented to our emergency department with complaints of general malaise and fatigue. The patient had tested positive for COVID-19 at home 2 days prior. Associated symptoms included polydipsia and polyuria. Initial physical examination revealed an obese, acutely ill male who was alert and oriented to person, place, and time. Vital signs on arrival showed sinus tachycardia and hypotension. was elevated Capillary blood glucose could not be quantified by glucometer. Laboratory results were consistent with hyperglycemia at 815 mg/dL, high anion gap metabolic acidosis with a pH of 7.257, and acute kidney injury stage 3. Elevated amylase and lipase levels were above the reportable range. Osmolarity was elevated at 335, leading to a diagnosis of HHS overlapping with severe pancreatitis. The patient's condition deteriorated rapidly, requiring non-invasive ventilation with high-flow nasal cannula (HFNC) due to tachypnea, although chest imaging revealed no acute intrathoracic pathology. Arterial blood gas analysis indicated an O2 requirement of 26.5%. An abdominal ultrasound was performed which ruled out gallstone pancreatitis. The patient was managed with an insulin drip and aggressive intravenous fluid hydration. Despite this, the patient's clinical condition continued to worsen, leading to persistent hypotension that required vasopressor therapy. Multiorgan failure ensued, including cardiovascular involvement, with elevated troponin levels (2212 > 5498 > 7243), indicative of a non-ST elevation myocardial infarction (NSTEMI).

This case highlights a severe presentation of DKA and HHS secondary to the inflammatory cascade produced by the COVID-19 virus. The expression of several cytokine receptors on human pancreatic islets has been studied, revealing the susceptibility of pancreatic beta cells to COVID-19-associated cytokine-induced damage. This can lead to severe insulin deficiency in patients who may already have been developing diabetes mellitus. Pandemic is over but COVID-19 continues to impact patients with chronic medical conditions significantly, and vaccination can help reduce morbidity and mortality in these patients.

CV-06

The elusive and non-specific presentation of critical illness myopathy

Andre Marra Nazario, MD; Marilee Tiru, MD; Mario Robles-Franceschini, MD

Critical illness myopathy is a rare and underdiagnosed clinical entity. It is characterized by proximal, rather than distal muscle weakness, preserved sensory sensation, and muscle atrophy. Due to its vague presentation and nonspecific symptoms, its diagnosis may be unperceived and usually occurs at an advanced stage of disease progression. Here in, we present a case of critical illness myopathy secondary to COVID-19 infection misdiagnosed as a cerebrovascular accident with associated rhabdomyolysis.

Our patient is an 83-year-old male with a medical history significant for a recent non-hypoxemic COVID19 infection, combined heart failure with reduced ejection fraction, moderate persistent asthma, seizures, coronary artery disease, diabetes mellitus type two, and chronic kidney disease stage IV who presents to the emergency department after two days of hypoactivity and dysuria. After being recently discharged from the intensive care unit he began to develop generalized proximal limb weakness which was noticeably present on physical examination. Initial evaluation at present admission was remarkable for severe sepsis secondary to complicated urinary tract infection with lactatemia and uncontrolled hyperglycemia warranting treatment with insulin drip, aggressive intravenous fluid resuscitation, intravenous antibiotic therapy, and ICU level of care. The patient then developed an episode of complete aphasia with worsening of bilateral and symmetrical proximal generalized limb weakness. Acute ischemic or hemorrhagic stroke was ruled out. CPK levels were severely elevated (8863) with associated acute kidney injury concerning for rhabdomyolysis and medication-induced myositis. ESR and CRP also markedly elevated. MRI of lower extremities remarkable for findings consistent with diffuse myositis. An electrodiagnostic study performed revealed evidence of proximal myopathic patterns with active denervation, characteristic of critical illness myopathy. Inflammatory myositis workup consisting of a myositis specific 11 antibodies panel was negative. Patient was managed with supportive treatment and physical therapy emphasizing early mobility. He was transferred to inpatient rehabilitation and discharged from the hospital later on with improving generalized weakness and decreasing trend inflammatory markers.

Although the differential diagnosis of weakness is broad, a high index of suspicion for CIM should ensue in patients recently infected with COVID-19 and consequently presenting with generalized weakness. It may result in poor inspiratory effort resulting in respiratory failure with concomitant challenging extubation due to muscle weakness and atrophy. As such, its expedited diagnosis via EMG studies and prompt therapy including early mobility with physical rehabilitation may prevent negative outcomes and greatly impact morbidity and mortality.

CV-07

Non-Surgical Resolution of Dialysis-Associated Steal Syndrome: Adapting Peripheral Artery Disease Management Principles to the Upper Extremity

Angel Ruiz-Vera, MD; Antonio Díaz-Hernández, MD; César Hernández-Arroyo, MD, FASN, FASDIN

The arteriovenous fistula (AVF) is the preferred vascular access for patients with End-Stage Renal Disease (ESRD) due to its lower morbidity, mortality, and maintenance costs. However, complications like Dialysis-Associated Steal Syndrome (DASS) may arise, where blood is diverted from the distal extremity, leading to ischemia. Risk factors for DASS include female gender, age over 60, diabetes, and peripheral vascular disease. While surgical interventions are the traditional treatment, this case presents an alternative approach, drawing parallels to the management of peripheral artery disease (PAD) in the lower extremities.

An 82-year-old female with ESRD, insulin-dependent diabetes, and hypertension, on hemodialysis via a left upper arm AVF, presented with left arm pain during dialysis sessions. Imaging confirmed DASS, with significant stenosis in the radial and ulnar arteries. Initial management involved balloon angioplasty and intra-arterial administration of nitroglycerin, resulting in symptom resolution. However, symptoms recurred after four months. Repeat imaging again revealed stenosis, managed with nitroglycerin, leading to improved blood flow. In a manner similar to PAD management post-angioplasty in the lower extremities, the patient was prescribed Aspirin, Rivaroxaban, Isosorbide mononitrate, and Amlodipine to maintain arterial patency. This regimen led to sustained symptom relief, demonstrating the potential for applying PAD management principles to the upper extremity in DASS.

This case illustrates the successful adaptation of PAD management strategies to treat DASS in the upper extremity, challenging the traditional reliance on surgical intervention. It underscores the importance of thorough clinical assessment and patient-tailored treatment strategies, especially in cases where surgery may pose higher risks. Further studies are needed to evaluate the long-term efficacy of this approach in upper extremity ischemia management.

Adapting peripheral artery disease management principles from the lower to the upper extremities can offer an effective non-surgical alternative for treating DASS, especially in elderly patients with high surgical risk. This case emphasizes the potential for individualized, conservative treatment approaches in complex vascular scenarios.

CV-08

Unmasking a Rare Cause of Structural Heart Disease: Sinus Venosum Atrial Septal Defect with Partial Anomalous Pulmonary Venous Return in a Middle-Aged Hispanic Man

Carlos Villanueva, MD; Héctor Sepúlveda-Alemañy, MD; Gisela Puig-Carrión, MD; Marcel Mesa-Pabón, MD

Sinus venosum atrial septal defects (SVASD) are rare congenital anomalies often associated with partial anomalous pulmonary venous return (PAPVR). If left untreated, these defects may lead to irreversible pulmonary arterial hypertension.

A 59-year-old Hispanic male with medical history of hypertension, type 2 diabetes, and chronic kidney disease presented to the emergency room with two weeks history of worsening lower extremity and scrotal edema with associated dyspnea on exertion. He had presented to other hospitals with the same symptoms in the past year and had been started on loop diuretics for suspected diastolic heart failure. He denied allergies, prior surgeries, or toxic habits. Vital signs were unremarkable, though physical examination revealed significant lower extremity edema. ECG revealed a first-degree AV block and non-specific ST changes, while chest X-ray showcased mild vascular congestion. Laboratory studies were remarkable for elevated pro-BNP. Decision Making: The patient was admitted to the telemetry ward for diuresis. A transthoracic echocardiogram (TTE) revelaed normal systolic and diastolic function at rest and no significant valvular pathology, however, there was increased right chamber size. A bedside bubble study suggested a large intracardiac shunt and a transesophageal echocardiogram (TEE) revealed a sinus venosum defect measuring 2.3 cm with left to right shunt. Cardiac magnetic resonance (CMR) with contrast confirmed the presence of SVASD with associated right upper lobe PAPVR. He underwent an uncomplicated left and right heart catheterization which revealed obstructive coronary artery disease involving the proximal left anterior descending artery and mild pulmonary hypertension. After a multidisciplinary discussion including input from cardiothoracic surgery service, adult congenital heart diseases specialist, and shared decision-making with the patient, he agreed with the proposed clinical impression and management. He successfully underwent coronary artery bypass grafting (CABG) and concurrent repair of the SVASD and PAPVR.

Surgical repair is indicated in patients with left to right shunt large enough to cause physiologic sequelae, right heart enlargement, and no evidence of significantly elevated pulmonary artery systolic pressure or pulmonary vascular resistance. Our case highlights the diagnostic challenge of sinus venosum ASD (SVASD), key indications for multimodality imaging, and importance of high clinical suspicion.

CV-09

BIPHASIC, TERTIAN FEVER, OR NEITHER?

Diego Ortiz-Mendiguren, MD; Manuel Del Rio-Montesinos, MD; Nicole Rivera-Bobe, MD; Gerardo Echevarria-Batista, MD

The case of a 62-year-old male with no significant past medical history who developed symptoms after returning from a month-long trip to Punta Cana, Dominican Republic. The patient experienced a fever that initially subsided but recurred two days later, along with generalized body aches and a rash, raising concerns for a tropical or vector-borne illness common in the region. He presented to the emergency department during the night shift.

Vital signs were stable, with a temperature of 37.2°C, blood pressure of 127/82 mmHg, and heart rate of 61 bpm. Physical examination revealed a petechial rash on the upper and lower extremities, extending to the torso, without signs of systemic involvement such as eye suffusion or jaundice. Tourniquet testing was inconclusive due to the baseline petechial rash. Laboratory findings were notable for leukopenia (WBC 4.2 x 10^3/µL), bandemia (15%), hemoglobin and hematocrit levels of 16.8 g/dL and 49.3%, respectively, thrombocytopenia (PLT 34 x 10^3/µL), and elevated liver enzymes (SGPT 114 U/L, SGOT 144 U/L). The patient was admitted for further evaluation and management of suspected dengue fever or other viral illnesses, with malaria also being considered due to the fever pattern and the endemic nature of the region he visited.

The initial workup included a broad panel of tests to rule out common viral and bacterial pathogens, including malaria, dengue, chikungunya, and leptospirosis. Imaging studies, including a chest X-ray, revealed no acute cardiopulmonary disease. Malaria smear tests were conducted promptly, while dengue, chikungunya, Zika, and leptospirosis serologies required several days for results. Determining the correct diagnosis was critical, as it would guide the patient's treatment, ranging from antimalarials to managing potential hemorrhagic dengue fever. Given the acute thrombocytopenia and elevated hematocrit, the patient was treated as if in the critical phase of dengue.

The malaria smear tests returned negative, supporting the initial management strategy. The patient improved and was discharged several days later after his platelet counts and hematocrit normalized. Eventually, dengue serology also came back negative. However, Chikungunya IgM was positive, confirming the diagnosis. This case highlights the complexity of diagnosing febrile illnesses in travelers returning from endemic regions where diseases like malaria, dengue, and chikungunya coexist. The fever pattern initially suggested Plasmodium falciparum malaria, a tertian fever pattern, especially given the recurrence of fever after a brief remission, a pattern seen in both dengue and malaria. Dengue fever, in particular, can exhibit a biphasic fever curve, where the initial febrile phase subsides only to recur after a day or two, with the second phase lasting another one to two days. This "saddleback" fever pattern, reported in about 5% of dengue cases, contributed to the initial diagnostic uncertainty. Notably, no previous cases have documented a biphasic-like fever with a critical-like phase associated with a confirmed chikungunya infection. This case underscores the diagnostic challenges faced when evaluating febrile patients with recent travel to endemic areas.

CV-10

A rare form of diagnosing Malignant Melanoma

Euri Fernández-Nuñez, MD; Luis Cruz, MD; Rebecca García, MD; Sarahí Rodríguez, MD; Eneida De La Torre, MD; Josselyn Molina, MD; Gabriel García, MD; Juan Carballo, MD

Malignant melanoma has an increased incidence worldwide and this is attributed to solar radiation exposure. Any clinically suspected lesion must be assessed by complete diagnostic excision biopsy, If the biopsy is positive, a wide local excision is performed. However, metastasis to regional lymph nodes is the most accurate prognostic determinant. Therefore, sentinel lymph node biopsy (SLNB) for diagnosed melanoma plays a pivotal role in the management strategy. PET-CT scan is necessary for staging and follow-up after treatment.

81 years old Male with known medical history of AHTN, T2DM, was saw by his PCP for evaluation of left side inguinal bump. Since the growth did not disappear, he decided to seek medical attention. Abd/Pelvic CT with IV contrast report enlarged left inguinal node with eccentric cystic-necrotic change and mild stranding of the surrounding fat for which Lymphoma, metastatic disease and infected lymph node were considered. The patient was told he must see a surgeon for the bump.

General surgeon evaluated the patient and requested a fine needle aspiration of the lesion, wich revealed an atypical population of oval cells with pigment, as a result, excisional lymph biopsy was performed. The gross pathology showed crystal's, mottled, with dark pigment, localized in the deep fascia and close examination showed irregular fragments of fibroadipose tissue, sections of tin brown rubbery nodes. Immunohistochemistry Analysis and Tumor Phenotype were positive for Ab-MELAN-A (Anti-melanosome (MART-1)), Ab S100 (S100 protein), Ab SOX-10 (Melanoma, breast, salivary gland, neural crest tumors) and HMB-45 (Anti-melanosome). PHENOTYPE STUDY CONSISTENT WITH A METASTATIC, MELANOMA, upon questioning, he denied weight changes, dizziness, SOB, no change in appetite or abdominal pain. The patient was referred to the Medical Oncologist for further recommendations. General skin physical examination was performed by Oncologist and showed no suspicious lesion, the diagnosis was discussed. However, the patient complained of left sole pain upon walking, no primary lesion was identified upon complete physical skin examination. Dermatology consultation and PET CT scan was requested for staging.

Malignant melanoma is 100% diagnosed by physical examination on a suspected lesion with the mnemonic ABCDE wich stand for Asymmetry, Border, Color, Diameter and Evolving, best technique after recognize is an excisional biopsy, wich we have to recall on a bump who persist after clinical management and guideline recommended steps. Melanoma spread via lymphatics or by hematogenous dissemination, primary tumor could be in an internal organ or might have regressed spontaneously by immune response, in this case, only remains the metastasis on sentinel lymph node, wich is recognized and excised, leaving no disease behind by PET CT scan. Melanomas carry a poor prognosis with higher risk of systemic spread and remains the most lethal form of cutaneous neoplasm.

CV-11

Fentanyl-Induced Cardiomyopathy: A growing Concern in the Opioid Crisis

Euri Fernández-Nuñez; H. Kaur, MD; Sarahí Rodríguez, MD; Andrés Calvo, MD; Antonio Orraca, MD

Opioids are widely used for acute pain management, anesthesia, and chronic cancer pain. However, there has been an alarming rise in opioid use disorder with illicit use of high potency synthetic opioids like fentanyl. The highly addictive nature of opioids has led to an increase in fatal overdose with 68,000 death in 2020, and a newly rarely reported complication of cardiomyopathy.

We present the case of a 40-year-old male with a known history of Hep C, OUD, IVDU for two years with no cardiac disease, who presented to the hospital with 4 days of SOB. His symptoms progressively worsened, prompting him to seek medical attention at the ER. On evaluation, vital signs were: HR: 110 bpm, BP: 150/90mmHg, RR: 28bpm, T: 96.8°F, and O2: 85% RA. Physical examination revealed an acutely ill appearance, moderate respiratory distress, sinus tachycardia, lung auscultation: rales and bibasilar crackles, 2+ bilateral leg edema and positive JVD.

Initial laboratory WBC: 27 × 10^3/µL. BMP bicarbonate of 16.6 mmol/L. ABG's pH: 7.59, PaO2: 60 mmHg, and pCO2: 21 mmHg (HAGMA with primary respiratory alkalosis), O2: 94% on a NRM, Pro-BNP: 891pg/ml, and a urine toxicology positive for fentanyl. CXR: prominence of interstitial markings and multifocal confluent airspace opacities throughout both lung, EKG with sinus tachycardia without evidence of ischemic/structural heart disease.

Was intubated for progressive acute hypoxemic respiratory failure and admitted to the ICU. The differential diagnoses included acute MI, aspiration pneumonitis, and PE. cTNI levels were 49, 44, and 41 ng/L at 0, 3, and 6 hours respectively, CTA w/o consolidations nor PE. 2DEcho with EF of 15-20% non dilated LV with severe global hypokinesia. After 2Decho findings, patient was treated aggressively with intravenous furosemide for HFrEF management regimen. With forced diuresis, peripheral and pulmonary edema improved, and oxygen requirements decreased. On the third day of admission, the patient was extubated. Repeat 2DEcho with normalize EF 50-55% and no wall motion abnormalities. Fentanyl induce cardiomyopathy was entertained considering history of fentanyl abuse, transient global severe LV disfunction, EKG w/o findings to suggest structural ischemic heart disease and cardiac markers not suggestive of ACS. Was discharged with a follow-up at cardiology clinic.

Fentanyl-induced cardiomyopathy is a rare but serious condition that may be overlooked due to the overlap of symptoms with other opioid-related side effects. Diagnosis requires a comprehensive evaluation, including laboratory and imaging studies, to differentiate fentanyl-induced heart failure from other etiologies. Management strategies focus on optimizing heart failure treatment while addressing opioid use and providing supportive therapies to mitigate cardiovascular effects. Awareness of fentanyl-induced cardiomyopathy is crucial for healthcare providers, especially given the alarming rise in the use of high-potency synthetic opioids. It is important to recognize that fentanyl overdose can cause a sudden decrease EF in otherwise normal hearts and failure to recognize and treat this pathology in a timely manner, may lead to increase mortality in this patient populations.

CV-12

Breaking the Mold: Nivolumab's Unexpected Role in Triggering Autoimmune Diabetes

Fabiola Feliciano-Bonilla, MD; Marlian Montesinos-Cartagena, MD

Nivolumab is a monoclonal antibody that acts as an immune checkpoint inhibitor, specifically targeting the PD-1 protein on T cells. By binding to PD-1, nivolumab prevents cancer cells from evading the immune system, allowing T cells to effectively attack tumors. Its use has become increasingly common due to supportive clinical trials demonstrating enhanced survival and response rates in various cancers, including renal cell carcinoma and non-small cell lung cancer. However, nivolumab is associated with an increased incidence of immune-related adverse events, particularly autoimmune endocrinopathies, such as hypophysitis, adrenal insufficiency, thyroid disorders, and new onset diabetes mellitus.

We present the case of a 61-year-old male with a history of metastatic renal cell carcinoma, with metastases to the pancreas and lung, who has been on nivolumab since 2020. The patient, who had no prior history of diabetes mellitus, presented to the emergency room with severe hyperglycemia (blood glucose over 500 mg/dL) and symptoms of polyuria and polydipsia. His vital signs were stable, but laboratory results were notable for a beta-hydroxybutyrate level of 25 mmol/L, a high anion gap metabolic acidosis of 17, urine ketonuria, negative glutamic acid decarboxylase (GAD) antibodies, and arterial blood gases showing a pH of 7.3. These findings were consistent with a diagnosis of new-onset mild diabetic ketoacidosis (DKA). The patient was admitted to the intensive care unit and started on an insulin drip. Endocrinology was consulted, and there was a discussion regarding whether this was a case of type 3c diabetes secondary to pancreatic damage or new-onset insulin-dependent autoimmune diabetes, likely triggered by nivolumab. Given the patient's stable metastatic disease with no progression on PET scans since 2021, hematology-oncology decided to discontinue nivolumab. The patient's DKA resolved during the hospital stay, and he was discharged on insulin therapy.

Immune checkpoint inhibitors like nivolumab have become a cornerstone in cancer treatment, yet the relationship between the PD-1 pathway and the development of autoimmune disorders remains poorly understood. While this patient had been on nivolumab for four years, most cases of immune-mediated diabetes have been reported within one week to one year of starting therapy, and about half of these cases test negative for autoantibodies. To date, only 42 cases of nivolumab-induced autoimmune diabetes have been reported. This case highlights the possibility of nivolumab-induced autoimmune diabetes in the absence of metastatic pancreas progression. Although the exact mechanism remains unclear, ongoing research is crucial to better understand these autoimmune endocrinopathies. As nivolumab continues to revolutionize cancer treatment, healthcare providers must remain vigilant for these serious, albeit rare, adverse events.

CV-13

A Rare Case of Ewing Sarcoma of the Anterior Mediastinum

Fabiola Garau, MD; Luis Colón, MD; Carolina Quintana, MD; Gisela Feliciano, MD

Ewing sarcoma, characterized by its small round cell morphology, is a highly aggressive and rare malignant neoplasm originating from mesenchymal stem cells. Most commonly affects the bones of the lower extremities and pelvis in children and adolescents with a slight preference in males. Extraskeletal Ewing sarcoma, which can occur in any soft tissue, accounts for 12% of Ewing sarcoma cases with an incidence of 0.4 per million individuals. Specifically, extraskeletal Ewing sarcoma originating from the mediastinum is extremely unusual with no more than 20 cases reported in the literature and is associated with poor prognosis. The occurrence of a secondary malignant neoplasm is associated with higher morbidity and mortality. The objective of this case report is to show an atypical and aggressive presentation of Ewing sarcoma arising from the anterior mediastinum with concomitant acute myeloid leukemia in a young Puerto Rican male.

A 28-year-old male without past medical history presented to the Emergency Department due to progressively worsening nonproductive cough, fatigue, fever, and retrosternal pleuritic chest pain that started 1 month ago. Symptoms persisted despite receiving respiratory therapies at home. Physical examination was pertinent for bilateral expiratory wheezes. Vital signs were within normal limits, initial laboratories were remarkable for severe thrombocytopenia, and arterial blood gases were remarkable for hypoxemia. Chest X-ray showed a widening of the upper mediastinum with a deviation of the trachea towards the right midline. The patient was admitted under the Internal Medicine service for further management. Chest CT with contrast was ordered which revealed a 10.9 cm x 10.4 cm x 8.6 cm anterosuperior mediastinal mass and three non-calcified pulmonary nodules. CT of the abdomen and pelvis with contrast was negative for lymphadenopathy. The Hematology Oncology service on the case suspected a highly neoplastic process and recommended a biopsy for definitive diagnosis. The interventional radiologist proceeded to perform a CT-guided biopsy of the anterior mediastinal mass. Pathology revealed a rare soft tissue sarcoma favoring extraskeletal Ewing sarcoma. Unexpectedly, the flow cytometry performed was positive for acute myeloid leukemia. Due to its acute and aggressive presentation, the patient passed away despite receiving induction chemotherapy with a 7+3 regimen of cytarabine and doxorubicin.

Ewing sarcoma arising from the anterior mediastinum is a very unusual disease associated with poor prognosis, especially when it presents with a secondary concomitant malignant neoplasm. The absence of specific clinical signs often delays diagnostic and therapeutic management. For this reason, it is important to remain aware of the rare presentations of Ewing sarcomas since the early diagnosis and initiation of therapy may impact prognosis and survival.

CV-14

Acute pericarditis as an early manifestation of acute aortic dissection

Frances Connor-Recio, MD; Kyara Ostolaza-Oquendo, MD; André Marra-Nazario, MD; Adrián Chico-Moya, MD; José Escabí-Mendoza, MD

Acute aortic dissection (AAD) is a medical emergency resulting from tearing of the aortic intima with creation of an intramural hematoma that may lead to hypoperfusion of vital organs, aortic rupture, hemodynamic compromise, and death. Quick diagnosis is imperative because 20% of patients with AAD die before arriving to the hospital and mortality increases by 1-3% every hour, if left untreated. The diagnosis of AAD can be challenging because the symptoms overlap with other more common emergency department (ED) conditions, such as an acute coronary syndrome, pulmonary embolism, acute pericarditis, and stroke. Interestingly, case reports and AAD series indicate that pericarditis may masquerade as an early manifestation during AAD, that may lead to overlook the primary disorder and delay lifesaving treatment.

This is a 75-year-old male with history of hypertension, obstructive sleep apnea, prostate cancer status-post radical prostatectomy and radiotherapy with active metastasis on hormonal therapy. The patient presented to our ED with general malaise, weakness, recurrent chest pain symptoms at rest, of 3-4 days of evolution, stabbing-like, pleuritic and increasing with body movement, worse if recumbent and improved with sitting position. On physical exam he was afebrile, borderline low BP, mild tachycardia, intermittent systolic pericardial rub, no heart murmurs, nor overt heart failure. Initial ECG revealed sinus tachycardia, diffuse ST-segment concave elevations with PR-segment depressions. Serial high-sensitive troponin levels showed a maximum value of 99ng/L (normal value <22ng/L), with subsequent values in decreasing trend suggestive of an acute to subacute myocardial injury pattern. Thus, he was admitted to cardiac intensive care unit, with diagnostic impression of acute idiopathic myopericarditis. Pertinent laboratory tests included a chronic stable anemia, mild leukocytosis, normal lactic acid, elevated Pro-BNP of 1,836 (normal <450pg/ml) and elevated CRP-HS of >300 (normal <5mg/L). Echocardiography revealed a mild pericardial effusion, preserved left ventricular systology, no segmental wall motion abnormality, and a proximal ascending aorta aneurysm (4.7cm) with an aortic root dilation (4.3cm) with mild aortic regurgitation. The patient's clinical condition improved with volume repletion, high-dose aspirin, and colchicine therapy. Chest CTA performed revealed a type-A AAD, extending from the aortic root through the aortic arch and towards the abdominal aorta. He was subsequently managed with esmolol and clevidipine intravenous infusions. The cardiothoracic surgeon deemed the patient a poor surgical candidate due to metastatic prostate cancer and refusal to accept blood transfusions following patient’s advanced directives. He was weaned off IV infusions with oral heart rate and blood pressure medications, and palliative care measures were implemented.

This case further illustrates the challenges in diagnosing AAD and its variable clinical presentation. Physicians should consider the possibility of a type-A AAD as a rare but important underlying cause of acute pericarditis. AAD related pericarditis may be attributed to slow leakage or exudate from the aortic hematoma that facilitates pericardial inflammation. The latter has also been suggested to be a warning sign of tamponade to develop in the subsequent hours to days that follow. Recognizing AAD promptly can be crucial in saving lives.

CV-15

Title: Silent Struggles: Unraveling the Mystery of Dyspnea in Chronic Granulomatous Disease

Gabriela Rodríguez-Bengochea, MD; Lucas Mondo, MD; Andrea Ramos, MD; Nicole Sosa, MD; Ruth Santos, MD; Sylvette Nazario, MD

The most common cause of hospitalizations among patients with Chronic Granulomatous Disease (CGD) is recurrent infections (Oikonomopoulou, 2022). We present the case of a 65-year-old female patient with CGD presenting with hypoxemia, shortness of breath, and wheezing for the last two months. In CGD patients with hypoxia, the differential diagnoses include pneumonia, bronchiectasis secondary to recurrent infections, and obstruction from lung granulomas (Oikonomopoulou, 2022). However, an unexpected finding was revealed during bronchoscopy.

A 65-year-old female with CGD, bronchiectasis, asthma, and cleft lip and palate surgically corrected was admitted to the internal medicine department due to complaints of shortness of breath persisting for two months. Laboratory tests were remarkable for lymphocytic predominant leukocytosis at 12.57. A chest CT demonstrated bilateral parenchymal reticulation and ground-glass opacities with architectural distortion more pronounced at the left lower lobe. Given her CGD history, a bronchoscopy with biopsy was performed, demonstrating a foreign body (vegetable material) and scant lung tissue with non-specific changes (no granulomas, vasculitis or malignancy). Further evaluation by speech and swallow services identified a congenital absence of the uvula.

This case illustrates a patient with CGD, congenital absence of the uvula, cleft lip, and cleft palate who presented with worsening dyspnea. Unlike pediatric patients, aspiration in adult patients is rarely described in the literature. Patients with CGD are at increased risk of dysphagia and esophageal dysmotility disorders, and those with cleft lip/palate can develop dysphagia despite repair (Laskey, 2009). This case highlights the impaired clearance of inflammation in patients with CGD. As advances in the management of CGD have extended patient lifespans, non-infectious complications are becoming increasingly relevant. This case underscores the importance of a thorough history, physical evaluation, and consideration of all comorbidities in patients with CGD.

CV-16

Giant Adrenal Myelolipoma Associated with Congenital Adrenal Hyperplasia

Grace Orta-Vázquez, MD; Jeryann Leoto-Pabón, MD; Armando Cruzado-Ramos, MD; Cristina D González-Bello, MD; Samuel Padilla-Rosa, MD

Adrenal myelolipomas (AML's), account approximately for 6 to 16% of incidental adrenal lesions that mainly affect patients with Congenital Adrenal Hyperplasia (CAH). These neoplasms have been reported with an estimated incidence of 36% in this population. Typically, lesions tend to be small, nonfunctional, asymptomatic, and usually occur unilaterally. However, there are a few exceptions, with lesions exceeding 10cm termed giant adrenal myelolipomas, which are very uncommon. Giant AML's are known to cause mass-effect symptoms, with patients reporting general complaints of abdominal discomfort, dyspepsia, back pain and fatigue. Given the particularities of giant AML's and unusual clinical features, we report a case of a 34-year-old Hispanic woman with CAH due to 11β – hydroxylase enzyme deficiency. The patient was diagnosed with CAH when she was around 8 years old but reported non-adherence to treatment ever since late teenage years. She presented to our ER due to acute abdominal pain, fatigue and vomiting of one day of evolution. On physical examination, the patient presented a distended abdomen, dullness and absent sounds with diffuse abdominal pain and tenderness to palpation. A computed tomography of abdomen and pelvis with contrast revealed a giant retroperitoneal mass. Exploratory laparotomy was planned and concluded in excision of a well-circumscribed intact encapsulated left adrenal mass. The pathology report described a myelolipoma of adrenal gland measuring 31 x 22.0 x 8.5 cm and weighing 3,335.0 grams (about 7.35 lb.) with margins of resection free of lesion. After surgery, the patient was monitored showing significant improvement within a day and full resolution of symptoms. At this point, the patient was oriented about her condition and discharged home with indications for an outpatient post-op evaluation by general surgeon and recommendations for prompt endocrine evaluation and management of CAH condition. This case report illustrates the clinical presentation of a rare adrenal gland tumor and emphasizes the significance of recognition and understanding of these lesions, as well as the active surveillance of patients with CAH to provide proper treatment and manage complications in a timely manner to avoid long-term adverse events.

CV-17

(Sun)Burned by Merkel Cell Carcinoma: A presentation of multiple primary skin lesions in the upper extremity with associated metastatic disease

Gretchen Estrada, MD; Kaur Harjeet, MD; Sarahí Rodríguez-Pérez, MD; Rebecca Ortíz-García, MD; Josselyn Molina Ávila, MD

Merkel Cell Carcinoma (MCC) is a rare and aggressive cutaneous malignancy with increasing incidence among the elderly. It typically arises in sun-exposed areas such as the head and neck and often presents as a solitary violaceous nodule. Those affected have an elevated risk of recurrence with progression to metastasis which prompts close monitoring by primary care physicians and oncologists. We present the case of an 83-year-old male patient with an extensive history of occupational sun exposure who had regular follow up with his dermatologist for actinic keratosis. The patient reported not using sun protection over the last 50 years and developed a non-painful, rapidly growing lesion on his right hand that has persisted for two months, with additional similar lesions appearing on the same arm. The dermatologist performed a shaved skin biopsy, and pathology revealed a dense nodular infiltration of atypical basophilic round cells consistent with Merkel Cell Carcinoma. The patient was referred to the hematology/oncology clinic, and a whole-body PET-CT scan was performed and identified neoplasms in the right middle finger with metastatic nodal disease (largest node measuring 2.9 cm x 1.9 cm). Based on the American Joint Committee on Cancer (AJCC) staging system, he was classified as Stage III MCC. The management of MCC is stage-dependent and can involve immunotherapy, radiotherapy, and/or surgical excision. The patient was started with Pembrolizumab, an immunotherapy agent indicated for locally advanced and metastatic MCC. Follow-up is scheduled in one month for post-therapy evaluation. This case highlights the rising incidence of MCC, particularly in older individuals with significant sun exposure, underscoring the importance of early detection and management. As primary care physicians, it is crucial to recognize risk factors and symptoms of MCC to facilitate early recognition, timely intervention, reduce recurrence, and enhance patient quality of life.

CV-18

Renal denervation as a treatment for resistant hypertension in Puerto Rico

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Sympathetic activation plays a critical role in the development of hypertension and cardiovascular disease. Moreover, renal nerves regulate blood pressure and fluid volume through renal sympathetic efferent nerves and modulate sympathetic outflow through renal sensory afferent nerves. Therefore, the American Heart Association recommends renal denervation (RDN) as a treatment alternative for specific types of patients, including those with resistant hypertension, intolerance to multiple medications, history of non-adherence, multiple comorbidities, or high cardiovascular risk. This is the case of a 44-year-old female with uncontrolled hypertension after one year of diagnosis. The patient has had multiple episodes of hypertensive urgency within the last six months. She presented to the Emergency Department with one day of progressive chest pain. At admission, blood pressure read as 190/85 with the highest peak of 210/100, heart rate was around 70 bpm, and other vital signs were within normal limits. Physical examination was unremarkable with no abnormal findings. The patient had preserved renal function, and no anemia or electrolyte imbalances were found. Troponins were normal, not consistent with myocardial injury, and the EKG did not suggest myocardial ischemia. Echocardiography showed left ventricular hypertrophy with preserved ejection fraction between 50% and 55%, and renal ultrasound showed normal sonographic evaluation of the kidneys and bladder. A noninvasive stratification myocardial perfusion scan was performed and showed no coronary artery disease. Due to high suspicion of renal stenosis, the patient underwent right renal catheterization, which showed the main and distal branches to be opened, ruling out renal artery stenosis. Other causes of secondary hypertension were also ruled out by laboratory testing. After optimization of antihypertensive medical therapy, symptoms improved mildly but did not significantly change blood pressure. During hospitalization, the patient underwent renal denervation using radiofrequency. The day after the procedure, the patient's systolic and diastolic pressures decreased by 40 mmHg and 10 mmHg, respectively. The patient was discharged safely and followed by an outpatient cardiology clinic. Renal denervation has been proven to be an innovative technique, although there is still a gray area in selecting patients who can benefit the most from this intervention. Nevertheless, this approach could be a therapeutic solution for underserved rural communities in Puerto Rico, in particular, those with low financial income, poor adherence to medical therapy and follow-up visits, and limited access to cardiology specialists.

CV-19

Effective Control of Pancreatitis-Related Gastric Varices Through Splenic Artery Embolization: A Case Report

Jerry Cruz-Rodríguez, MD; Isabel Castellanos-Castillo, MD; José Jiménez-García, MD

The emergence of gastric varices represents a critical and life-threatening complication primarily linked to chronic portal hypertension commonly associated with liver cirrhosis. However, proximity of the pancreas to the splenic vein poses a significant risk for such manifestation as acute pancreatitis (AP) and chronic pancreatitis (CP) can potentially compress the splenic vein. Obstruction of blood flow increases upstream pressure, contributing to pancreatitis-induced splenic vein thrombosis (PISVT), a rare but serious condition that can lead to left-sided portal hypertension and isolated gastric varices. We present a patient with bleeding isolated gastric varices caused by CP s/p Whipple procedure (WP) managed with splenic artery embolization.

A 57-year-old male with a past medical history of CP status post Whipple Procedure 2 years prior presented to the GI clinic with a one-week history of dark blood in the stool and symptomatic anemia. Physical examination at time of evaluation was remarkable for mild abdominal pain and pallor. Due to colonoscopy 1 year prior being unremarkable, Esophagogastroduodenoscopy was recommended which revealed bleeding isolated gastric varices which was medically managed with Sandostatin. Subsequent CT angiography revealed a complete splenic vein occlusion and thrombosis with compressed by the pancreas. After unrelenting symptoms and an intensive care unit admission, splenectomy was planned for definitive management, however due to the patient's prior Whipple procedure and collateral vasculature from SVT, the multidisciplinary team, consisting of gastroenterologist, surgery and interventional radiology, opted for splenic artery embolization instead.

Following the embolization, the patient was discharged with gastroenterology follow-up. At the one-month follow-up, there was no recurrence of variceal bleeding, no signs of anemia, and the patient reported no further episodes of bloody or dark stools. This case presents an uncommon treatment option for patients with isolated gastric varices, a rare occurrence in those with chronic pancreatitis.

Gastric varices resulting from pancreatitis represent a rare occurrence in clinical practice, constituting only 14% of all patients suffering from CP and for which only 12% present symptomatically thus undermining its infrequent but critical nature. Gastric vein engorgement is potentially life-threatening, with acute bleeding from gastric varices carrying a higher mortality rate compared to esophageal variceal bleeding. In PISVT, both constant compression of the vein by chronic pancreatitis and the hypercoagulable state associated with the condition contribute to splenic vein thrombosis. Diagnosing left-sided portal hypertension is typically clinical and should be considered in CP patients with upper gastrointestinal bleeding and no history of liver cirrhosis. Venous phase angiography is the gold standard for confirming PISVT, though it is best reserved for patients with unclear or acute upper GI bleeding. Diagnosis should be tailored to the patient's history and symptoms, using endoscopy, ultrasound, CT angiography, or MRI. PISVT leading to isolated gastric varices is a rare but dangerous complication of chronic pancreatitis. When splenectomy is not an option, splenic artery embolization can be a viable alternative treatment. A multidisciplinary approach, as demonstrated in this case, is essential for the accurate diagnosis and effective management of PISVT.

CV-20

A novel sonographic marker for detection of airways malignancies

Jesus Merced-Román, MD; Delva Rivera-Chacón, MD; Paola Vega-Labrador, MD; William Rodríguez-Cintrón, MD

Endobronchial Ultrasound (EBUS) is a recent bronchoscopic technique used for diagnosing and staging lung diseases, particularly lung cancer. It includes two types: Convex Probe EBUS (CP-EBUS) and Radial Probe EBUS (R-EBUS). EBUS effectively guides bronchoscopic sampling of various mediastinal and hilar lymph nodes, as well as central and peripheral pulmonary nodules, though it cannot image or sample certain lymph node stations, such as subaortic and paraesophageal nodes. Despite some limitations, EBUS remains essential for lung cancer diagnosis and staging due to its minimally invasive nature and ability to access a wide range of mediastinal and hilar lymph nodes.

An 80-year-old male with history of prostate cancer, asbestos exposure, and an 18 pack-year smoking history presented with a two-week history of persistent dry cough and sore throat. Physical examination was unremarkable. COVID-19 testing was positive, and mild hyponatremia was noted. Chest radiography revealed a 4.0 cm mass-like consolidation overlying the right fourth anterior rib, further confirmed by a CT scan showing a subpleural mass in the right lower lobe with central cavitation. A granuloma-like lesion had been stable since 2007. PET-CT indicated a hypermetabolic lesion with an SUV max of 7.4. Although percutaneous lung biopsy showed no malignant cells, R-EBUS revealed a peri-bronchial lesion. Transbronchial needle biopsy showed malignant epithelial cells with necrosis, confirming a diagnosis of non-keratinizing invasive squamous cell carcinoma. No mediastinal lymph node involvement was detected.

A patient with stage IIB right lower lobe invasive squamous cell carcinoma, non-keratinizing, underwent a right lower lobectomy. The mediastinal nodes dissected during surgery were reported negative, highlighting the effectiveness of EBUS in the early diagnosis and staging of lung cancer. EBUS is an advanced bronchoscopic technique crucial for evaluating lung diseases, including cancer, and is divided into two main types: Convex Probe EBUS (CP-EBUS) and Radial Probe EBUS (R-EBUS). CP-EBUS is primarily used for assessing and staging central lung lesions and mediastinal lymph nodes through transbronchial needle aspiration (TBNA), offering high diagnostic accuracy and a minimally invasive alternative to surgery. In contrast, R-EBUS diagnoses peripheral pulmonary lesions, using a radial ultrasound probe for real-time imaging and precise localization. While CP-EBUS allows real-time sampling, R-EBUS requires sequential sampling. EBUS is highly effective for guiding bronchoscopic sampling of some mediastinal (stations 2R, 2L, 3p, 4R, 4L, 7, 10R, 10L, 11R, 11L) and hilar lymph nodes, as well as central and peripheral parenchymal pulmonary nodules. Our case, the first one documented in Puerto Rico, highlights the survival benefit and early diagnosis of lung cancer. This is breakthrough in the diagnosis and treatment of this malignancy.

CV-21

A Case of Spontaneous Subcapsular Perirenal Hematoma with Hemorrhage: Is Trazodone the Culprit?

Jiomar Santiago, MD

Trazodone reduces neurotransmitters associated with arousal effects, including serotonin, noradrenaline, dopamine, acetylcholine, and histamine. The inhibition of serotonin affects platelet activation, increasing the risk of bleeding.

A 45-year-old man with a medical history of hypertension, type 2 diabetes mellitus, anxiety, depression, and post-traumatic stress disorder with allergies to ACE inhibitors, presents to the hospital following an episode of near syncope, during which he felt extremely weak and fell into his wife's arms. He reports that he was driving home when he experienced intense pain in his right flank. After arriving home, he exited the car and began walking toward his wife when he suddenly fell into her arms. He did not fall to the ground or hit his head on any object and did not lose consciousness or sphincter control. He has not experienced any recent trauma or surgical procedures and has no sick contacts at home. He did not have chest pain, shortness of breath, confusion, nausea, vomiting, diarrhea, constipation, or palpitations during the episode. The patient lives with his wife and two sons and is independent in activities of daily living. He denies drinking alcohol or using any illicit or recreational drugs. The patient has a history of smoking half a pack of cigarettes daily for 25 years, amounting to a total of 12.5 pack-years of smoking. He worked in the military for 17 years and is now retired.

On physical examination, the patient had no midline or paraspinal tenderness in the back, but there was right flank pain upon light palpation and percussion over the costovertebral angle. His vital signs on arrival were: BP 93/67 mmHg, MAP 76 mmHg, HR 105 bpm, RR 20 bpm, T 37.0°C, and SpO2 97% on room air. Significant findings on CBC included WBC 14.24 x 10^3/uL, Hg 9.60 g/dL, and MCV 88.2 fL. The coagulation panel (PT/PTT/INR) showed no significant findings. An abdomen-pelvis CT scan without IV contrast revealed a large right subcapsular hematoma with hemorrhage extending along the right retroperitoneum of uncertain etiology. His current medications include aripiprazole 20mg PO QAM, atorvastatin 20mg PO QHS, duloxetine 20mg PO QAM, metoprolol succinate 75mg PO QAM, omeprazole 10mg PO PRN, zolpidem 12.5mg PO QHS, trazodone 150mg PO QHS, and gabapentin 400mg PO TID. The patient refers has been on these medications for around 8 years now.

A few cases of spontaneous subcapsular perirenal hematoma have been reported in the absence of trauma or iatrogenic manipulation. This rare condition has been associated with renal cell carcinoma, renal hemorrhagic cysts, arteriovenous malformations, or infections. However, medications affecting platelets have not been widely documented in these cases. Trazodone has been reported to affect platelet activation by inhibiting serotonin, an effect that is magnified when used with other medications affecting coagulation. This case report suggests that medications may be a possible precipitant of these hematomas. Including a medication list, dosage, frequency, and time of use might be beneficial. This will allow for better stratification of additional risk factors of spontaneous subcapsular perirenal hematomas with hemorrhage.

CV-22

Connecting the Blisters: Medication Reconciliation Unveils the Correlation Between Gliptins and Bullous Pemphigoid – A Case Report

Joan Neptune-Rosa, MD; Manuel A Del Río, MD; Teresa Montesinos-Roig, MD

Bullous pemphigoid (BP) is the most common autoimmune blistering disease of the skin characterized by pruritic tense bullae over erythematous plaques that can appear in trunk and extremities. Its pathophysiology relies in neutrophilic degradation of skin and mucous basement membranes by dysregulated T cell immune response and autoantibodies against hemidesmosome proteins. Through decades, scientific data has linked BP incidence to advancing age, neurologic conditions like multiple sclerosis, and Parkinson's disease, and certain drugs as spironolactone and neuroleptics. However, recent insights suggest a potential association between bullous pemphigoid and dipeptidyl peptidase-4 inhibitors (DPP-4i), such as linagliptin. Gliptins are a commonly prescribed antidiabetic regimen for the treatment of Type 2 Diabetes Mellitus (T2DM). Since 2011, an increasing number of reported cases concerning the relation of BP and gliptins have been introducing complexity to the multifaceted etiology of this autoimmune blistering disease.

Here we present the case of an 83-year-old woman presenting to her primary care physician complaining of distressing skin itchiness. Her past medical history is remarkable for type 2 diabetes mellitus, hypertension, and memory deficit following unspecified cerebrovascular disease. Upon physical evaluation, patient exhibited multiple large, tense bullae, redness and inflammation in hands, feet, trunk, and back, suggestive of bullous pemphigoid (BP). Due to the limited availability of dermatological consults, her primary care physician managed the skin affection with topical corticosteroids followed by systemic corticosteroids, which are first line treatment for BP. Despite compliance with medication, her skin condition escalated prompting dermatology consultation. Biopsy confirmed the presence of BP prompting a medication review by the primary care physician as per dermatology service recommendation. Medication assessment revealed a correlation between bullous pemphigoid onset and the initiation of linagliptin-metformin combination therapy for glycemic control. Discontinuation of the linagliptin and shift to metformin and SGLT2 inhibitors for glycemic control led to remarkable remission of patient's lesions.

This case illuminates the link between gliptins and bullous pemphigoid, substantiated by lesion resolution upon discontinuation of the dipeptidyl peptidase-4 (DPP-4) inhibitor. The exclusion of metformin as a culprit further emphasizes the conceivable role of gliptins. Despite interventions with corticosteroids, the pivotal step in this case was the cessation of gliptins, underscoring the relevance for primary healthcare practitioners to consider bullous pemphigoid in elderly patients on gliptin therapy. Beyond the importance of considering dermatological complications of antidiabetic treatments with DPP-4 inhibitors, this case highlights the role of simple yet crucial interventions like medication reconciliation in primary care medicine. It advocates for the formulation of specific guidelines for primary care practitioners and encourages a multidisciplinary approach involving internal medicine, dermatology, and endocrinology specialists. The findings spotlight a gap in knowledge regarding gliptin-associated skin manifestations, urging a deeper understanding of the intersection between diabetes management and dermatologic complexities.

CV-23

The Pandora Box: When an Ischemic Stroke Leads to Autoimmune Disease Complexities

José Breton-Arias, MD; José Hernández-Puig, MD; Ricardo Muñoz-Santiago, MD; Adriel González-Rivera, MD; José Colón-Márquez, MD

Antiphospholipid syndrome (APS) is an autoimmune disorder characterized by venous and arterial thrombosis, increased risk of fetal loss, and antiphospholipid antibodies. Clinical presentations vary widely, often manifesting as thrombotic events. Among these, cerebrovascular involvement is common and contributes to its morbidity and mortality. Although ischemic strokes are rare in young adults, their occurrence warrants thorough investigation. We present a case of a young female who presented with an acute ischemic stroke, leading to the diagnosis of systemic lupus erythematosus (SLE) complicated by APS, Libman-Sacks endocarditis (LSE), and steroid-refractory immune thrombocytopenic purpura (ITP).

A 35-year-old female with a history of chronic thrombocytopenia presented with new-onset confusion, difficulty articulating words, and incoherent speech, which persisted for several hours before admission. Head computerized tomography (CT) scan without intravenous (IV) contrast revealed areas of acute ischemic infarction in the thalamus, left parietal, temporal, and insular cortices. She was admitted with a presumptive diagnosis of acute ischemic stroke. During her initial hospitalization, further evaluation revealed elevated titers of antinuclear antibodies (ANA), and antiphospholipid antibodies, suggesting an underlying autoimmune disorder. A transthoracic echocardiogram (TTE) showed left atrial dilation with severe mitral regurgitation, prompting further investigation. Transesophageal echocardiography (TEE) confirmed severe mitral valve regurgitation and echogenic material suggestive of vegetations. Given these findings, she was transferred to our institution. Upon evaluation, the patient was afebrile and in no acute distress. She reported a two-year history of palpitations, arthralgias, alopecia, Raynaud's phenomenon, ecchymosis, abnormal uterine bleeding, and visual disturbances. Physical examination revealed a holosystolic murmur, and scattered purpura on the upper arms. Laboratory findings included leukocytosis, lymphopenia, anemia, thrombocytopenia, proteinuria, an elevated reticulocyte count, and lactate dehydrogenase, with normal inflammatory markers. Serological testing confirmed hypocomplementemia and elevated titers of ANA, anti-dsDNA, anti-SSA, anti-cardiolipin IgG, anti-beta-2 glycoprotein IgG, and lupus anticoagulant antibodies. Brain magnetic resonance imaging (MRI) with IV contrast and venography revealed a few foci of restricted diffusion in the left periventricular and right parietal subcortical regions, along with intraluminal flow-related enhancement in the intracranial veins. Bone marrow biopsy demonstrated normocellular marrow with mildly increased megakaryopoiesis, occasional hypolobate megakaryocytes, and moderate thrombocytopenia. The patient met the diagnostic criteria for definitive SLE complicated by APS, LSE, and ITP. Treatment began with high-dose glucocorticoids, hydroxychloroquine, mycophenolate mofetil, and a high-dose statin. However, worsening thrombocytopenia required a two-day IVIG infusion, and subsequent refractory thrombocytopenia led to the initiation of intravenous rituximab. After a month of inpatient care, her thrombocytopenia improved significantly under full-dose anticoagulation with low molecular weight heparin. She was transitioned to oral prednisone and warfarin and discharged with follow-up care. Within five months, she showed marked improvement and has remained in complete remission.

This case underscores the challenges associated with cerebrovascular events in young patients. Ischemic stroke, a severe manifestation of APS, is further complicated by the presence of LSE, which increases the risk of embolic events. Early recognition and prompt treatment, including rituximab, are crucial for improving outcomes. Clinicians should maintain a high index of suspicion for APS and its complications in young patients presenting with ischemic stroke.

CV-24

A Case of Severe Direct Hyperbilirubinemia as a presentation of Iron Overload

Jose Rafael Méndez, MD; E. Malave-Santiago, MD; V. Echevarría-Román, MD; F. Vázquez-García, MD; L. Suárez-Fernández, MD

Iron overload is a clinically insidious condition that has serious end organ implications. Diagnosis is often untimely, hence, it is important to decrease threshold for inquiry, suspicion, and testing amongst clinicians as this condition may become highly comorbid and at times even fatal if not diagnosed early.

We describe a 75 year old female patient with a past medical history of cholecystectomy, end stage renal disease on hemodialysis, anemia of chronic kidney disease(CKD), coronary artery disease and diabetes mellitus that presents to the emergency department with a one month history of bilateral lower extremity weakness, lethargy and recent yellowing of her eyes. Patient was hypoactive and disoriented at initial evaluation. On physical examination, conjunctival icterus was noted, as well as hyperpigmentation on facial area sparing eyelids and upper extremities. Flapping tremors were also observed and her abdomen was distended with a positive fluid wave. Liver panel was significant for elevated liver enzymes (AST 115 U/L, AST 146 U/L), total bilirubin levels of 6.40mg/dl and direct bilirubin at 5.90mg/dl. Her serum ammonia was 82 umol/L. Abdominal ultrasound was performed with unremarkable findings. Abdominopelvic Computerized Tomography (CT) demonstrated mild to moderate ascites and hepatomegaly with liver nodularity. Patient was admitted with acute liver injury. Differential etiologies of liver decompensation considered included Obstructive jaundice and Drug induced liver injury (DILI) due to recent macrolide use. Due to worsening liver parameters despite treatment, Magnetic Resonance Computerized Pancreatography (MRCP) was ordered for further evaluation of biliary tract, but it was unremarkable. Further history-taking revealed the patient had been receiving multiple intravenous iron infusions to treat her anemia, raising alarms for induced iron overload. Further laboratory workup revealed a ferritin level of 8,848 ng/ml and a transferrin saturation of 93%. An abdominal MRI revealed a low attenuation signal of T2 imaging of the liver as seen with chronic iron deposition. Interventional Radiology was consulted for a liver biopsy, which revealed abundant intrahepatocyte and pericanicular golden-brown deposits compatible with hemosiderosis. A diagnosis of iron overload was made and HFE testing was ordered. Hematology was consulted to begin treatment with phlebotomy and iron chelation.

Iron overload is a diagnosis that is often overlooked. Excessive iron levels in the blood cause tissue damage by the intracellular production of reactive oxygen species. Tissues with L-type calcium channels are especially susceptible, including liver, heart, and endocrine organs, with our patient presenting cirrhosis and portal hypertension, as well as dilated cardiomyopathy with left ventricular ejection fraction of 10-15%. Hemodialysis patients are especially susceptible due to supplementation for anemia of CKD, and many iatrogenic cases have been reported. Its nonspecific presentation makes it a clinical challenge and timely diagnosis is crucial, as untreated iron overload causes lethal organ damage and late diagnosis may lead to multiple comorbidities.

CV-25

Navigating Livedoid Vasculopathy: A Case Report on Interdisciplinary Collaboration in Diagnosis and Management

José Ríos-Padín, MD; Delmarie M. Rivera-Rodríguez, MD; José Nuñez-Morales, MD; Nelson Álvarez-Cardín, MD

Livedoid vasculopathy (LV) is a rare disease in which excessive thrombosis of cutaneous vasculature leads to occlusion of dermal vessels and subsequent skin hypoxia and ulceration. Due to lack of proper oxygenation, lesions take a longer time to heal and are prone to infections and complications. Due to its rarity, LV is widely undocumented in the literature and achieving prompt diagnosis is challenging. We report the case of a 78-year-old male with medical history of hypertension, diabetes mellitus type 2, mixed hyperlipidemia, chronic kidney disease Stage 2, hypothyroidism, benign prostatic hypertrophy, and primary malignant neoplasm of prostate that presented to the emergency department due to 7 months progression of multiple non-healing chronic ulcers with residual hyperpigmentation surrounding hypopigmented, scar-like lesions and associated cellulitis in bilateral lower extremities. Prior to admission to internal medicine ward with a diagnostic impression of a left leg non-healing infected ulcer with associated cellulitis and a high suspicion of osteomyelitis, patient had unsuccessful treatment with the following: local care by enterostomal service, treatment with endovenous laser therapy, hyperbaric sessions, IV Vitamin C, and 2 completed courses of Clindamycin PO. Upon admission, laboratory and imaging workup were remarkable for normochromic normocytic anemia, elevated sedimentation rate, positive ANA test, and elevated protein C. Direct immunofluorescence showed the distinct pattern of homogenous fibrinogen deposition on thickened wall vessels with associated necrosis and a punch biopsy confirmed diagnosis of LV. Our case diverts from the typical trends for LV, as the patient presented is male, well over 75 and had a relatively early diagnosis. Additionally, our patient has comorbidities that have been reported in literature such as arterial hypertension but lacks cardiorenal complications. This case highlights the importance of considering LV when a patient presents with chronic, non-healing ulcers in the setting of multiple conditions that have the potential to induce a hypercoagulable state. Moreover, the patient's clinical history suggests initial trauma combined with warm temperatures fomented a favorable microenvironment for LV which supports correlations previously reported in literature. Although previous works have reported marked improvement of LV with hyperbaric oxygen therapy, this form of treatment provided no resolution of ulceration or symptoms in our patient for which alternative treatment was sought, consisting of antiplatelet agent. There was a total of seven services involved in this case: primary care team, enterostomal care, dermatology, infectious diseases, rheumatology, radiology, and pathology, underscoring the imperativeness of a multidisciplinary approach to aid in the diagnosis of LV. LV poses diagnostic challenges due to its rarity, variable presentation, and lack of awareness among physicians. Our case report underscores the importance of a collaborative and multidisciplinary approach in the diagnosis and management of LV. Through detailed clinical presentation and workup, we aim to contribute to the medical community's understanding of LV and its association with various comorbidities. Prompt recognition and accurate diagnosis are essential to alleviate patient suffering and optimize outcomes in LV management. Further research and awareness are needed to enhance early detection and improve patient care in cases of LV.

CV-26

Uncovering the Hidden Risk? hMPV and Invasive Aspergillosis in Neutropenic AML Patients on VEN/HMA Without IPA Prophylaxis

Kevin Rodríguez, MD; Cristian Rodríguez, MD; Danielle Pérez, MD; Jaymilitte Bosques, MD

The oral BCL-2 inhibitor venetoclax (VEN), combined with a hypomethylating agent (HMA), is an effective frontline therapy for older adults (≥75 years) or those with comorbidities who have acute myeloid leukemia (AML) and are ineligible for intensive chemotherapy (Chen et al., 2022). However, the necessity of antifungal prophylaxis in patients receiving VEN-based regimens remains uncertain. The incidence of invasive fungal disease (IFD) may not justify prophylaxis, and azoles require venetoclax dose adjustments, with potential liver, gastrointestinal, and cardiac toxicity risks (Guarana & Nucci, 2023).

The lower incidence of invasive aspergillosis in patients on less-intensive VEN/HMA regimens may be attributed to reduced prolonged neutropenia and mucositis. Studies show that the rate of IFD in patients receiving VEN/HMA is low and does not significantly differ based on antifungal prophylaxis use (Chen et al., 2022). The REVIVE study also found a low incidence of IFD in AML patients treated with VEN-based therapy, with antifungal prophylaxis not reducing IFD occurrence.

Although neutropenia is a common risk factor for fungal infections in hematological malignancies, other factors are important as well. In a study of 324 patients with invasive pulmonary aspergillosis (IPA), neutropenia was present in less than half of the cases, suggesting the need to explore additional risk factors for IPA in AML patients treated with VEN/HMA (Abers et al., 2016).

Viral lung infections, such as Human Metapneumovirus (hMPV), can create favorable conditions for fungal infections like aspergillosis. Mechanisms include epithelial damage and immune impairment, which increase susceptibility to fungal infections (Obar & Shepardson, 2023).

This case involves 76-year-old men with acute myeloid leukemia (AML) treated with Vidaza and Venclexta admitted due to severe thrombocytopenia and neutropenia. Three days after admission the patient developed a cough with associated fever. Viral panel testing was positive for hMPV. No other infectious process was identified, and supportive care was provided. After four days of persistent cough, a chest X-ray revealed new bilateral pulmonary opacities with nodular-like appearances. Chest CT showed peribronchial cuffing and clusters of multiple centrilobular nodules with a tree-in-bud appearance in the left upper and lower lobes. These findings were consistent with fungal pneumonia. Sputum cytology established aspergillus infection, leading to the initiation of treatment with voriconazole. Nine days after starting treatment, the patient developed new onset focal low back pain. A lumbar MRI was performed reporting discitis and possible vertebral osteomyelitis. Within the following two days, the patient experienced acute hypoxemic respiratory failure requiring mechanical ventilation. Chest CT suggested possible superimposed pulmonary hemorrhage and worsening bilateral multinodular pulmonary consolidations.

This case underscores a critical, previously underexplored connection between hMPV infection and invasive aspergillosis, intensifying concerns about how viral infections may significantly predispose neutropenic AML patients treated with VEN/HMA to severe fungal infections—especially in the absence of IPA prophylaxis recommendations in current guidelines.

CV-27

An Unusual Case Presentation of Loculated Pericardial Effusion Following a Recent Cholecystectomy

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Loculated pericardial effusion is a condition of abnormal accumulation of fluid in a confined area within the pericardial sac. This condition often arises due to surgery, trauma, or inflammation, which can lead to adhesions that compartmentalize the fluid. Such effusion poses a unique diagnostic and therapeutic challenge, as they may resemble other cardiac disorders.

We report the case of a 62-year-old man with type II diabetes mellitus, heart failure, OSA, and a history of aortic valve replacement. The patient had undergone a laparoscopic cholecystectomy due to acute cholecystitis one month before presenting to our institution. He complains of progressive abdominal swelling and bilateral lower extremities edema.

An unenhanced CT scan of the abdomen and pelvis revealed incidental complex pericardial collection at the inferior aspect of the heart, along with fluid-gas collection in the gallbladder fossa. This was confirmed by performing subsequent echocardiography that revealed loculated pericardial effusion. TEE also depicted localized pericardial effusion associated with a small and highly mobile structure in the aortic valve that was highly suspicious of vegetation.

The patient was taken to the operating room for pericardial window via left anterior mini-thoracotomy, which revealed severe adhesions between the pericardium and epicardium. Simultaneously, CT-guided drainage and aspiration of fluid from the gallbladder fossa showed organized hematoma. Multiple cultures were taken, including blood, pericardial tissue, and gallbladder fossa fluid, and all were negative. Cardiac catheterization findings were consistent with restrictive cardiomyopathy and right-sided volume overload, emphasizing the need for further evaluation of the progression of the disease process. Unfortunately, a cardiac MRI could not be performed due to the patient's MRI-incompatible pacemaker.

This case underscores the diagnostic challenges of loculated pericardial effusion following recent surgery, particularly in patients with significant cardiac histories. Despite limitations like the inability to perform an MRI due to the patient's pacemaker, alternative imaging, and cardiac catheterization proved essential for guiding treatment. It also highlights the need for vigilant postoperative monitoring, as complications can manifest in distant organ systems.

CV-28

The Culprit of Recurrent Ischemic Strokes: Moyamoya in A Woman in her Twenties

Lidynell Burgos-Martínez, MD; Gretchen Ríos-Grant, MD; Vanessa Sepúlveda, MD

Moyamoya is a rare cerebrovascular condition characterized by the progressive narrowing of large intracranial arteries and the characteristic development of small-vessel collaterals. Moyamoya is more common in East Asian countries, occurs more frequently in females than males, and has a bimodal age distribution. This case report details the presentation and diagnosis of Moyamoya in a young female patient.

A 28-year-old female patient with a medical history of Type 1 diabetes mellitus, Hypertension, Dyslipidemia, Bronchial asthma, and recent ischemic stroke (4 months prior) was transferred to our institution for evaluation of recurrent ischemic stroke after the patient presented with left arm weakness. Physical examination was remarkable for decreased tone and strength (3/5) over the left upper limb. Laboratory findings showed mild leukocytosis, raised inflammatory markers, elevated fibrinogen, and positive cryoglobulins. She was investigated with a brain MRI showing focal areas of diffusion restriction identified in the right frontal lobe compatible with acute ischemia. Small regions of encephalomalacia were identified also in the right frontal lobe where another ischemic infarct was identified 4 months prior. A head CTA demonstrated asymmetrical thinning and wall thickening of the right carotid artery, concerning for vasculitis. Digital subtraction angiography showed right-sided robust leptomeningeal collateral to posterior parietal-temporal circulation from the right posterior artery, leading to a diagnosis of Moyamoya. The patient was treated conservatively with dual antiplatelet therapy and high-intensity statin, and scheduled for outpatient follow-up by endovascular surgery, rheumatology, neurology, and physical medicine and rehabilitation services.

This rare case highlights the importance of further investigation in younger patients with a history of ischemic strokes. Early recognition of Moyamoya and appropriate treatment are crucial to prevent recurrent ischemia and the progression of the disease, which can lead to severe neurological deficits. CT and MRI scans may provide the first evidence of the disease, and if suspected, cerebral angiography may be conducted to establish the diagnosis. Treatment options include conservative medical management, which may involve drugs such as antiplatelet agents, but the mainstay treatment is surgical bypass, which can improve cerebral hemodynamics and reduce future ischemic events. With increased awareness and further research, we may understand contributing genetic and environmental factors and promote the development of potential diagnostic and treatment options for Moyamoya.

CV-29

DIRA Syndrome: Not Your Typical Etiology of Chronic Liver Disease

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Deficiency of the IL-1 receptor antagonist (DIRA) is a rare genetic disease caused by a defective protein, leading to unopposed overstimulation of IL-1 and resulting in an autoinflammatory cascade that primarily affects the skin and bone from birth. Only a few cases of this rare autosomal recessive condition have been reported worldwide, including families from Puerto Rico, the Netherlands, and Canada. In Puerto Rico, the estimated allele frequency is 1.3%, with an incidence of 1 in 6,300 births. Fortunately, IL-1 inhibitors like Anakinra, a recombinant human IL-1 receptor antagonist, can induce near-complete remission of symptoms. However, irreversible complications can develop due to delays in diagnosis and treatment, as illustrated by our patient with chronic liver disease.

The patient is a 28-year-old male with a history of DIRA syndrome who showed marked clinical improvement after starting Anakinra. He was previously diagnosed after presenting with chronic cutaneous pustulosis, recurrent episodes of osteomyelitis, osteolytic lesions, osteopenia, muscle atrophy, dilated cardiomyopathy, microcytic anemia, intellectual disability, and hepatosplenomegaly. Unfortunately, the patient was unable to obtain the medication for approximately two weeks due to high costs and health insurance issues. He presented to our ED due to a progressive abdominal distention and a worsening generalized rash. The physical examination was notable for ascites, caput medusa, and a diffuse erythematous scaly rash with overlying pustules covering more than 80% of BSA. Laboratory workup was remarkable for normocytic anemia, thrombocytopenia, hypoglycemia, mild hyponatremia, and hypoalbuminemia, though liver enzymes and INR were within normal limits. Abdominopelvic CT scan with IV contrast showed a lobulated and slightly nodular liver with evidence of chronic portal vein thrombosis. The upper endoscopy revealed the presence of esophageal varices. Paracentesis, performed for therapeutic and diagnostic purposes, revealed a serum-abdomen albumin gradient of 1.1, consistent with portal hypertension. Medical treatment for newly diagnosed decompensated chronic liver disease (CLD) was initiated with Furosemide, Spironolactone, Lactulose, and Albumin. The patient was discharged home after achieving adequate compensation and subsequent Anakinra reinitiation.

This case underscores a novel association between DIRA and chronic liver disease, expanding to the spectrum of DIRA-related complications. DIRA is typically linked with multi-organ damage as a consequence of severe, unregulated inflammatory cascade. However, there is no prior evidence in the literature describing DIRA as the etiology of CLD. In this case, the absence of the common CLD risk factors suggest that DIRA syndrome is the most likely cause of his irreversible hepatic damage. This case not only describes new complications that may be seen in patients with this condition but also highlights the importance of making medical innovations accessible to all communities.

CV-30

A Twist on Renal Tubular Acidosis and Gynecological Cancers

Ludwig Rodriguez-Beras, MD; Jessica Maisonet, MD; Marcos Chacón, MD; Kimberly Pagán, MD; Karla Vélez, MD, FACP

Type 1 Renal Tubular Acidosis is an uncommon disorder, particularly in adults that is characterized by an impaired acidification of the distal renal tubule. The etiology and diagnosis could mean a more severe or even yet catastrophic underlying condition.

Case of a 30 year old female with no past medical history visits the emergency department due to lower extremity weakness. Associated symptoms included disturbing back pains with leg paresthesias for 1 to 2 months experiencing several falling episodes due to worsening weakness of her legs hence decided to visit the emergency room. Physical Examination significant for motor strength ⅗ of lower extremities with inability to stand without assistance or make any steps, and diminished patellar and achilles tendon reflexes. Initial screening revealed positive SIRS criteria, normocytic normochromic anemia, high anion gap metabolic acidosis with secondary respiratory acidosis and tertiary non anion gap metabolic acidosis as per arterial blood gasses and chemistry panel the latter significant for moderate hypokalemia with severely low bicarbonate levels, hypercalcemia, acute kidney injury, elevated lactate levels, liver enzymes and total bilirubin. Abdominal and Chest CT scan confirmed Large pelvic mass of ovarian vs endometrial origin with extensive liver and lung metastasis, retroperitoneal and perirectal lymphadenopathy as well as lytic bone lesions of right ilium, sacrum and lumbar vertebral bodies from L5 to S1. Patient admitted for IV hydration, broad spectrum antibiotics, bicarbonate and potassium replacement, PRBC transfusion, anemia and hypercalcemia workup, Hematology-Oncology, Gynecology, Nephrology, Infectious Disease, Neurology and Pulmonology services consultation. AKI responded well to IV hydration however low serum bicarbonate levels persisted, and given urine pH of 5.5, urine electrolytes were ordered revealing positive urine anion gap consistent with Renal Tubular Acidosis Type 1. Further labs revealed Hypercalcemia of malignancy hence started on Bisphosphonate therapy as well as Bicitra for urine alkalinization with favorable results. Persistent Leukocytosis was observed however Blood, Urine, Sputum and stool cultures failed to identify any significant pathogen hence infection was ruled out and IV antibiotics were discontinued as per ID recommendations, attributing blood cell count to malignant process. Hematology Oncology services recommended on colonoscopy and endoscopy by GI services which ruled out an Upper GI or Colonic origin. Liver lesion biopsy was obtained by Interventional Radiology services revealing Metastatic Undifferentiated Adenocarcinoma of Gynecologic origin unclear if uterus or ovary. Head CT scan was negative for any intracranial pathology and Lumbosacral MRI was not able to be obtained given patient noncompliance due to pain. Unfortunately, there was worsening of metastatic lung and intra abdominal disease which required high oxygen support, vasopressors and further developing ARDS, multiorganic failure and death in spite of all multidisciplinary team efforts.

This case illustrates the association between an aggressive gynecologic neoplasm in a young individual and its renal complications such as Type 1 Renal Tubular Acidosis and how a prompt identification can aid in an earlier diagnosis and provide a more favorable outcome.

CV-31

Cryptogenic Organizing Pneumonia with a transient Acquired Immunodeficiency and Neutrophilia

Luis Cruz, MD; Euri Fernández-Nuñez, MD; Carlos García-Rodríguez, MD

Cryptogenic organizing pneumonia is believed to be a consequence of alveolar injury and is characterized by the formation of organized buds of granulation tissue obstructing the alveolar lumen and bronchioles resulting in respiratory failure. Exact etiology is unknown and is diagnosed after excluding any other possibilities. It is thought to be secondary to alveolar epithelial injury due to an unknown insult that cause leakage of plasma proteins into the alveolar space, resulting in the recruitment of inflammatory cells. There is lacks precise prevalence data.

We present a case of a 45 years old Female with known medical history of Iron deficiency Anemia, who present to our ER c/o SOB, fever, myalgias, productive cough and weakness that start in the previous 6 days, vital signs remarkable for T: 39.9C, HR: 137/min BP: 118/73, RR: 16, O2 ARA: 91%, CBC: w/o evidence of infection, BMP unremarkable, LDH: 407, Chest CT: bilateral areas of parenchymal consolidation on the right lung lower lobe, the left lung upper and lower lobes and the lingula consistent with bilateral pneumonia, No PE, EKG: sinus tachycardia without evidence of ischemia. ABG's: Ph: 7.5, pCO2: 28, pO2: 79, O2 SAT: 97% with NC at 4L/min. Influenza A/B, SARS-CoV-2 RNA, COVID-19 Antigen, Mycoplasma IgM were negative.

The Patient was admitted to ward with TELE, and then transferred to ICU for progression on CXR of bilateral infiltrate and worsening hypoxemia 2 days later, WBC: 18 and ALC: 290. Adenovirus, Coronavirus 229E, Coronavirus HKU1, Coronavirus NL63, Coronavirus OC43, SARS Coronavirus 2(SARS-CoV-2), Human Metapneumovirus, Human Rhinovirus/Enterovius, Influenza B, Parainfluenza Virus 1, Parainfluenza Virus 2, Parainfluenza Virus 3, Parainfluenza Virus 4, Respiratory Syncytial Virus, all viruses were negative. Bacterias like Bordetella parapertussis (IS100), Bordetella pertussis (ptxP), Chlamydia pneumoniae, Mycoplasma pneumoniae also were negative, Procalcitonin: 27.400 ng/dL, D-Dimer 562 ng/mL. Lymphocyte Subset Panel: White Blood Cell Count (High): 10.9, Lymphocytes (%) Low 13.4, Lymphocytes (Lymph) (Low): 1.5, Helper T cells(CD4+CD3): Low, Helper T cells Absolut count: low, Suppressor T cells CD8: Low, Suppressor T cells absolut count: Low, CD4/CD8: normal, HIV: Negative, ANA: Negative, B/C x3: negative, Nares culture: Negative, Sputum culture: Negative, U/A: Negative for infection. We keep looking for the source, Herpes Simplex Virus I IgG, Herpes Simplex Virus II IgG, Cytomegalovirus (CMV) IgG, Toxoplasma gondii Antibodies Ig, Rubella(IG-G) all were negative. Immunoglobulins IgA, Immunoglobulins IgM, Immunoglobulins IgG under normal range. After empiric treatment with guideline management, lymphocyte and WBC normalize, without evidence of pathogen.

COP is associated with excellent, long-term outcomes when treated promptly. Patients demonstrate a rapid symptomatic response to treatment, the majority get a complete cure. It is important for the primary team to work-up young patients with aggressive pneumonia without evidence of immunodeficiency.

CV-32

Exposing the Obscured: The Role of Erythromycin in Unveiling Gastric Cancer concealed by Residual food.

Manuel Del Rio, MD; Bianca Goyco-Cortes, MD; Andrés Bernal-Rabell, MD

Gastric cancer incidence has been declining in the United States over the past five years; nevertheless, it is still the 5th most common cancer worldwide with countries like Japan, Mongolia and South Korea being the most affected. Gastric adenocarcinoma can be classified as either localized or diffuse, the latter often composed of signet ring cells. Several risk factors are associated with gastric malignancies, including a diet high in salt and nitrates, Helicobacter pylori infection, tobacco use and even GERD (gastroesophageal reflux disease). Symptoms may be nonspecific initially, which can include early satiety, nausea, vomiting. However, as disease progresses, patients may present with gastrointestinal obstruction, bleeding, or ascites in case of metastasis. Decreased gastric emptying from advanced disease may lead to retained food which may obscure the gastric mucosa. This case involves the unusual presentation of a patient with advanced gastric cancer that was concealed in initial upper endoscopy.

A 96-year-old male patient with a past medical history (PMHX) of type 2 diabetes and hypertension (HTN) presented to the emergency department with nausea and vomiting of 4 days' duration. Labs were notable for microcytic-normochromic anemia with a hemoglobin (Hgb) of 10.2 g/dL. An abdominal and pelvic CT scan with IV and PO contrast revealed mild thickening of the gastric antrum, suggestive of gastritis, without any mass lesion noted. The patient was discharged with oral PPI therapy, with an outpatient endoscopy to be scheduled, but he returned two days later due to persistent vomiting. Upper endoscopy revealed significant residual particulate matter along with findings of LA Grade D erosive esophagitis. Considering the above findings, diet was switched to full liquid and patient was administered IV erythromycin to aid with gastric emptying. Five days later, upper endoscopy was repeated in which the gastric mucosa was more clearly visualized, showing an irregular friable mucosa in the distal gastric body. Biopsies were positive for poorly differentiated adenocarcinoma with signet ring cells, confirming the diagnosis of diffuse gastric adenocarcinoma. Due to the patient's advanced age and frailty, he was enrolled in palliative care.

The initial presentation of gastric cancer may be nonspecific, but these nonspecific symptoms may be pointing toward a more diffuse and advanced disease process. Upper endoscopy will usually reveal evident lesions in the gastric area, but in cases of severe gastric dysmotility secondary to linitis plastica, there may be abundant residual food, obscuring any notable lesion. This case underscores the importance of using promotility agents like erythromycin to aid with gastric motility and the emptying of residual gastric material, which allows for better visualization of the gastric lumen. This can facilitate obtaining tissue biopsies, leading to a definitive diagnosis and providing closure for patients and their families. In frail patients with evidence of advanced diffuse gastric cancer, palliative care is the mainstay of therapy.

CV-33

Uncommon Diagnosis of Concomitant Hypoglycemia and Hyperglycemia; A Rare Case of Type C Diabete Mellitus

Marcos Chacón-Cruz, MD; Neshma Román, MD; Michelle Mangual, MD; Milton Carrero-Quiñonez, MD

According to the American Diabetes Association (ADA), there are four DM subgroups. Most are familiar with type 1 diabetes (T1DM), an immune-mediated condition associated with beta-cell destruction leading to absolute insulin deficiency. T2DM is well recognized as a spectrum involving varying degrees of peripheral insulin resistance and beta cell dysfunction. Type 4 DM refers to gestational or pregnancy-related diabetes. Diabetes mellitus is a group of diseases defined by persistent hyperglycemia. Secondary diabetes, commonly referred to as type 3c diabetes mellitus (T3DM/T3cDM), is one of the probable problems linked with CCP. Chronic calcific pancreatitis (CCP) is an inflammatory illness that impacts the pancreas, causing calcifications and scarring inside the gland. Type 3c diabetes mellitus (T3cDM) is a clinically relevant condition with a prevalence of 5–10% among all diabetic subjects in Western populations.

Case of 53 y/o M patient with PMHx Hx of pancreatitis, diabetes mellitus with macrovascular complication (Stroke) who went to ER due to 1 week of uncontrolled hyperglycemia. As per the father, the patient has an unintentional weight loss of about 40 pounds. The patient states that they have not been taking their prescribed insulin due to medication refill issues. As per the father, the patient with a chronic history of heavy drinking after divorce, compliance with his insulin regimen, and foul-smelling stool. Patients with glucotoxicity-associated symptoms such as unintentional weight loss of more than 40 pounds, polyphagia, and general malaise. The patient was admitted due to uncontrolled hyperglycemia and labs were done that showed N-N anemia with hemoglobin in... and chemistry with no electrolytes distance and preserved renal function. HBA1C 17.6 Abd-pelvic CT showed atrophic changes of the pancreas with multiple calcifications, with chronic calcifications likely from previous inflammatory changes.

T3cDM refers to pancreatogenic diabetes, a form of diabetes that arises as a result of pancreatic diseases affecting both the exocrine and digestive functions of the pancreas. Diagnostic criteria for T3cDM include the presence of exocrine pancreatic insufficiency, pathological pancreatic imaging, and the absence of autoantibodies associated with type 1 diabetes mellitus (T1DM). T3cDM is a rare type of pancreatogenic diabetes resulting from pancreatic pathology and is often underdiagnosed, or mistaken for T1DM or T2DM. it is important to consider T3cDM for planning effective long-term management. Close, careful monitoring and follow-up are essential to ensure good glycemic control, optimization of intestinal absorption and nutritional status, as well as to account for those factors that develop this challenging condition. Our patient was discharged home with a prescription for fecal elastase and f/u with an endocrinologist in 2 weeks.

CV-34

Unexpected Finding: A Case Report of Appendiceal Neuroendocrine Tumor Unveiled Post-Appendectomy

Milaris Sánchez-Cordero, MD; Madeline-Guerrero, MD; Félix Rivera-Troia, MD; Milton Carrero-Quiñones, MD

Neuroendocrine tumors (NETs) of the appendix are rare, with an incidence of about 0.15 per 100,000 cases per year, and they are more common in women. These tumors originate from subepithelial neuroendocrine cells and are often discovered incidentally after an appendectomy for suspected acute appendicitis. They can be difficult to diagnose early due to their nonspecific symptoms, which often resemble those of acute appendicitis, such as abdominal pain.

In this case, a 59-year-old male with no significant medical history presented to the Emergency Department with right lower quadrant abdominal pain. The pain, described as stabbing and intermittent, worsened with movement. The patient also experienced chills, nausea, and vomiting but had no fever, diarrhea, or rectal bleeding. Clinical examination revealed positive McBurney's and Psoas signs, and laboratory tests indicated leukocytosis with neutrophilia, suggestive of acute appendicitis. A CT scan confirmed acute appendicitis with perforation. During laparoscopic appendectomy, a perforated appendix with a markedly thickened base indicative of malignancy was found. The appendix was curled and adhered to the colon, and it was sent for pathological examination. Histopathology revealed a well-differentiated goblet cell adenocarcinoma (G1: pT3, pN0) involving the subserosa but not the visceral peritoneum. Immunohistochemical staining was positive for CK20, CDX2, and Synaptophysin.

NETs of the appendix are classified based on tumor size and histological findings, which are essential for determining treatment and prognosis. According to the European Neuroendocrine Tumor Society (ENETS) and the North American Neuroendocrine Tumor Society (NANETS) guidelines, appendectomy is sufficient for tumors smaller than 1 cm, while a right hemicolectomy is recommended for larger lesions. In this case, the tumor was larger than 1 cm and had perforated, so a hemicolectomy was performed. Postoperatively, the patient had an uneventful recovery, and follow-up examinations, including a colonoscopy, revealed only multiple dysplastic polyps in the transverse colon, sigmoid, and rectum, with no signs of metastasis or lymphadenopathy. The patient was referred to an oncologist and is currently receiving chemotherapy with 5-FU. One year post-surgery, the patient reported no discomfort or signs of recurrence.

This case underscores the importance of considering neuroendocrine tumors in the differential diagnosis of atypical presentations of acute appendicitis. Despite their rarity, early detection and appropriate surgical management are crucial for a favorable prognosis. Although antibiotic treatment alone has gained traction for uncomplicated appendicitis, this case illustrates that without a thorough diagnosis, the prognosis could be poor due to the risk of recurrence or complications. The absence of comorbidities and lack of disease spread in this patient suggest a good prognosis with a low probability of recurrence. Ongoing surveillance, including physical exams, imaging studies, and tumor markers every six months for the first two years and then annually for at least three more years, is essential to monitor for potential recurrence. This case highlights the necessity of careful clinical and histopathological evaluation to avoid misdiagnosis and ensure timely treatment, reducing morbidity and mortality associated with these rare tumors.

CV-35

Psoas Abscess or Pseudomyxoma Retroperitoneal? A Diagnostic Challenge

Milaris Sánchez-Cordero, MD; Félix Rivera-Troia, MD; Milton Carrero-Quiñones, MD

Retroperitoneal pseudomyxoma (RP) is a rare and challenging condition marked by mucinous tumor growth in the retroperitoneal space, often originating from the appendix or other abdominal organs. Due to its nonspecific symptoms, such as abdominal pain, bloating, and weight loss, diagnosing RP can be particularly difficult. In this case, a 79-year-old male patient with a history of hypertension presented to the emergency department with abdominal pain and right-sided back pain radiating to his leg. Initial imaging revealed a substantial retroperitoneal abscess on the right side, extending into the lower back and measuring up to 20 cm. Further examination identified an additional fluid collection in the right lower quadrant, connected to the iliopsoas retroperitoneal abscess. Physical examination revealed significant abdominal distention, suggesting ascites. Paracentesis was performed, yielding a jelly-like fluid that was sent for pathological evaluation, which confirmed the presence of a disseminated appendiceal mucinous neoplasm.

Further imaging with contrast revealed stable pseudomyxoma peritonei with peritoneal and retroperitoneal implants and a focal area of rectal wall thickening. The patient underwent a right hemicolectomy and exploratory laparotomy, during which gelatinous masses originating from the appendix were discovered. Histopathological analysis confirmed retroperitoneal pseudomyxoma associated with a low-grade mucinous appendiceal adenocarcinoma. Due to the complexity of this case, the patient was referred to an oncologist and is currently receiving second-line chemotherapy with Capecitabine, Oxaliplatin, and Bevacizumab while awaiting HIPEC therapy, which is not currently available in Puerto Rico. The etiology of RP is often linked to mucinous tumors from the appendix, leading to the accumulation of mucinous fluid within the retroperitoneal cavity. The condition's varied presentation can mimic other abdominal diseases, making diagnosis particularly challenging. Accurate diagnosis typically involves clinical, radiological, and pathological assessments, with imaging playing a crucial role in identifying characteristic features. The standard treatment approach for RP includes Cytoreductive Surgery (CRS) combined with Hyperthermic Intraperitoneal Chemotherapy (HIPEC), aiming for complete cytoreduction. The prognosis depends on tumor grade, disease extent, and cytoreduction completeness. Unfortunately, treatment options are limited in extensive or recurrent cases. This case underscores the diagnostic complexity of retroperitoneal pseudomyxoma and highlights the importance of a multidisciplinary approach in managing such rare conditions. Early recognition, timely surgical intervention, and appropriate adjuvant therapies, including HIPEC and chemotherapy, are crucial for improving patient outcomes in this challenging disease.

CV-36

Preventing Fatal Outcomes for Rare Cases of Cystic Tuberculosis: Novel diagnostic tool vs Standard diagnosis

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In the United States, around 22% of people affected by TB are still not diagnosed by the WHO-recommended rapid diagnostic test. Cystic Tuberculosis (TB) is often underdiagnosed, as Diffuse Cystic Lung Disease (DCLD) is a rare manifestation of pulmonary tuberculosis, making DCLD caused by tuberculosis infection easily ignored in clinical work.

This is the case of a 62-year-old male patient, with a medical history of Arterial hypertension, Diabetes mellitus, Dyslipidemia, and Peripheral vascular disease, who presented with complaints of cough, one episode of hemoptysis, and a 1-week history of shortness of breath. A social history of heavy alcohol consumption, marihuana use, and multiple sexual partners. Upon presentation, his vital signs showed hypoxemia, tachypnea, and tachycardia. Physical exam findings included tanned skin, decreased breath sounds with bilateral crackles, distended abdomen, and lower extremities edema. Marked leukocytosis with neutrophilia was present in lab work. Chest CT scan revealed bilateral extensive cavitary abnormalities, bilateral nodular opacities, trace pleural effusion, cirrhosis with stigmata of portal hypertension, and associated ascites. Workup included sputum cultures, acid-fast bacilloscopy, PPD, and IGRA. Wide-spectrum empiric antibiotic therapy was initiated. Despite initial clinical improvement, after four days, the patient started to deteriorate presenting signs of pulmonary edema, worsening hypoxemia, and hypercapnic respiratory acidosis, requiring non-invasive ventilation. Despite optimal management, the patient's condition continued to decline. Due to poor prognosis, the goals of care and advance directives were discussed with the patient, and he opted for the Do Not Resuscitate/Intubate decision, dying from worsening respiratory failure 3 days later.

Even though, the diagnosis of TB was initially suspected, empiric treatment for pulmonary TB is not indicated as per guidelines recommendations; PPD test was in the gray zone with only 4mm growth, and IGRA, and bacilloscopy were sent to reference labs, causing a delay on diagnosis and initiation of specific treatment. The diagnosis of Pulmonary Tuberculosis was confirmed post-mortem by positive bacilloscopy and IGRA assay.

Reported cases have shown survival outcomes in patients with severe lung damage when tuberculosis treatment is initiated immediately following the availability of the GeneXpert MTB/RIF assay results. An affordable diagnostic tool that is not readily available in our region. This test simultaneously detects Mycobacterium tuberculosis complex (MTBC), and resistance to rifampin (RIF) in less than 2 hours. In comparison, standard cultures can take 2 to 6 weeks for MTBC to grow, and conventional drug resistance tests can add 3 more weeks. Although the presentation in this patient is considered a rare form of pulmonary TB, we would like to highlight the significance of having more effective and rapid diagnostic means, like the Xpert MTB/RIF assay, which can aid us in selecting treatment regimens, reaching infection control decisions quickly and most important, saving a patient's life.

CV-37

Unusual Drug-Induced Microangiopathic Anemia Secondary to Carfilzomib

Noheli Cotto-Guzmán, MD

Carfilzomib is a second-generation proteasome inhibitor that has been approved for the treatment of relapsed and refractory multiple myeloma. Despite its efficacy, Carfilzomib can occasionally induce a rare but severe adverse effect known as drug-induced thrombotic microangiopathy (DITMA). The management of Carfilzomib-associated DITMA remains poorly defined, with limited case reports and variable treatment outcomes. This report presents a case of a 61-year-old woman who developed DITMA to enhance understanding of this uncommon but significant adverse reaction.

During routine evaluation in preparation for an autologous bone marrow transplant, the patient presented with symptoms of fatigue and decrease in urine output, which developed over the course of one day. Further investigation revealed a drop in hemoglobin from 11.3 g/dL to 6.9 g/dL, elevated lactate dehydrogenase (LDH) levels, and the presence of multiple schistocytes on the peripheral blood smear. Additionally, the patient presented severe thrombocytopenia (42 x 10^3/µL), acute kidney injury with a serum creatinine level of 9.40 mg/dL (doubling her baseline), and significant electrolyte disturbances with a urinalysis remarkable for increased protein excretion. Given these findings and recent exposure to Carfilzomib (six days prior), a diagnosis of Carfilzomib-induced thrombotic microangiopathy was proposed.

The patient was admitted to the intensive care unit, where she required transfusion of two units of packed red blood cells and high-dose intravenous steroids. Despite these interventions, the patient's condition continued to deteriorate, developing overload secondary to worsening renal function, anuria and uncontrolled hypertension. In view of these new findings, an emergent plasmapheresis was ordered.

Following a week-long hospitalization, which included two sessions of plasmapheresis and one session of hemofiltration, hematological parameters went back to normal. No additional transfusions were need it, with stable hemoglobin of 10.6 g/dL and platelet count of 175 x 10^3/µL. Renal function returned to baseline levels (2.36 mg/dL), allowing for the tapering of steroids and transfer to a general ward for further electrolyte management. Finally, ADAMTS13 values was reported and were showed normal activity, confirming the diagnosis of DITMA.

In summary, Carfilzomib-induced thrombotic microangiopathy is a rare but critical condition that requires prompt recognition and management in patients undergoing treatment for multiple myeloma. A sudden drop in hemoglobin, worsening renal function, and thrombocytopenia should prompt immediate evaluation. Early intervention is essential to prevent complications such as dialysis dependence, deteriorating performance status, which can ultimately affect the patient’s eligibility for bone marrow transplantation, deeply impacting the final goal of long-term remission and overall survival.

CV-38

Alport Syndrome: Are you sure it's only hearing loss?

Paola Manrique-Pizarro, MD; Cristina González-Bello, MD; Samuel Padilla-Rosa, MD; Keyla Dávila-Marcano, MD

Alport Syndrome (AS), characterized by hematuria, hearing loss, and eye abnormalities, typically appears during the first decade of life. Frequently, this syndrome is misdiagnosed because its associated symptoms may overlap with those of other diseases. Consequently, diagnosing patients with AS can be challenging for physicians, as it requires a high degree of clinical suspicion. The following clinical case report focuses on the following scenario:

Case of a 75-year-old male patient visited his Primary Care Physician (PCP) for a follow-up appointment. His medical history is significant for epilepsy, recurrent deep venous thrombosis, chronic kidney disease complicated with renal hyperparathyroidism, dyslipidemia, bilateral hearing loss of unknown onset, peripheral vascular disease, and diabetes mellitus type II. The patient's past medical history was also notable for a cerebrovascular accident and thrombophilia. Upon evaluation, the patient was alert, oriented, and hemodynamically stable, with no evidence of cognitive impairments. The PCP ordered routine laboratory tests, which were within acceptable parameters given his numerous comorbidities. However, the urinalysis revealed hematuria and proteinuria. After reviewing these concerning results, the PCP ordered a renal ultrasound to rule out renal pathology as the cause of the abnormalities. The imaging results were unremarkable. Further evaluations were conducted by the Neurology and Cardiology departments, which ordered multiple laboratory tests and imaging studies but did not consider Alport Syndrome in their differential diagnosis. After ruling out the most common causes of hematuria and proteinuria, the team in charge of the patient in collaboration with the Nephrology team ordered genetic testing, which came back positive for COL4A3. The genes COL4A3, COL4A4, and COL4A5 are associated with the early onset of Alport Syndrome, characterized by abnormal collagen products, thin glomerular basement membranes, and the development of eye abnormalities, hearing loss, and kidney failure.

This case illustrates the situation of a patient who received a delayed diagnosis of Alport syndrome at age 75, even though this condition is most commonly identified in childhood. Although Alport syndrome is rare, early diagnosis is crucial for educating the patient and their family about the condition, anticipating potential complications, and ensuring the patient receives appropriate treatment while family members undergo adequate screening. Early recognition is imperative to enhance the patient's quality of life and to slow the progression to end-stage renal failure.

CV-39

A Case of Neurological Decline After Bariatric Surgery

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Bariatric surgery is recommended for patients with a BMI of 35 or higher who have obesity-related comorbidities, or for those with a BMI of 40 or higher. This procedure offers substantial benefits, including significant weight loss and improvements in conditions such as hypertension, diabetes, and dyslipidemia, ultimately enhancing overall mortality rates. However, successful outcomes depend on lifelong adherence to dietary and lifestyle changes, as well as regular monitoring of vitamins and nutrients. Failure to manage these aspects can lead to complications like metabolic derangements, dumping syndrome, and severe nutritional deficiencies, which can dangerously lower serum tonicity. Rapid correction of these imbalances poses a risk of Osmotic Demyelination Syndrome (ODS), characterized by acute demyelination due to sudden osmolarity shifts. Although often associated with the rapid correction of hyponatremia, ODS can also occur in the absence of hyponatremia following severe malnutrition. We present a case of a previously healthy woman who developed ODS a year after bariatric surgery due to malnutrition

A 33-year-old female with medical history of bariatric surgery presented to the Emergency Department with persistent watery diarrhea, diffuse swelling, and generalized weakness persisting over five months. Upon evaluation, she was afebrile, in no acute distress and hemodynamically stable. Physical examination was notable for generalized anasarca, patchy alopecia with lanugo hair, dry mucous membranes, hyperactive bowel sounds, pitting edema in the lower extremities, and patchy skin hyperpigmentation. Laboratory tests revealed anemia and severe deficiencies in vitamin D, zinc, cooper, selenium, and albumin. Given these findings, she was admitted with the clinical impression of severe malnutrition and symptomatic anemia which were treated with intravenous supplementation. Despite treatment, her condition deteriorated, resulting in altered mental status, ophthalmoplegia, difficulty swallowing and status epilepticus, necessitating mechanical ventilation. Further evaluation with Magnetic Resonance Imaging (MRI) with gadolinium showed a persistent T2/FLAIR signal at the pons, sparing the corticospinal tracts, known as the “piglet sign” seen in osmotic demyelination syndrome in the absence of hyponatremia. Despite continued supportive care, the patient’s neurological function did not improve.

This case emphasizes the need for diligent post-bariatric surgery follow-up to mitigate complications like osmotic demyelination syndrome (ODS). ODS can arise not only from hyponatremia but also from severe malnutrition. Key radiological findings include the “piglet sign,” where T2-weighted MRI shows hyperintense signals in the pons, resembling a pig’s snout. Physicians must be vigilant about the risks of severe nutritional deficiencies and rapid correction of imbalances to prevent potentially life-threatening complications.

CV-40

Navigating Complexity: A rare case of two different breast cancers in one male

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Male breast cancer, though rare, has seen an increase in incidence, particularly in those 65 and older, with risk factors including genetic mutations and family history. This case describes a male with simultaneous bilateral breast cancers of two different etiologies, invasive ductal carcinoma and ductal carcinoma in situ (DCIS).

The patient is a 74-year-old Hispanic man, with a remote history of prostate cancer, presented with a palpable mass in his left breast and an asymptomatic right breast. On physical examination, the left breast appeared asymmetrical while the right breast was normal in size and contour. There was a palpable left breast mass with ill-defined margins. An ultrasound demonstrated a category 4 solid lesion in the left breast at the 12 o'clock position, measuring 1.4 X 0.9 X 1cm. An ultrasound-guided core needle biopsy of the left breast revealed invasive ductal carcinoma, estrogen/progesterone receptor positive. A clip was placed and a post-procedural mammogram was performed on the left. At this time, the right breast was also screened. Unexpectedly, a right retroareolar region with suspicious segmental microcalcifications was discovered. A right-sided core needle biopsy confirmed DCIS, showing intermediate nuclear grade with focal necrosis and calcifications, cribriform pattern, and estrogen/progesterone positive. Therefore, he was ultimately diagnosed with invasive ductal carcinoma in the left breast and DCIS in the right breast, and was referred to oncology. The patient also underwent genetic testing, which is currently pending, although a family history of breast cancer was negative.

The occurrence of both types concurrently within the same patient is exceptionally rare, and highlights the complexity and variability of male breast cancer presentations. Current guidelines recommend mammogram screening in high-risk males. Our patient would be considered low risk, as he has no personal or family history of breast cancer and no known germline mutations, and only sought medical attention due to a palpable mass. The asymptomatic right-sided DCIS was only discovered due to current guidelines which suggest a post-procedural mammogram on the left, and a screening mammogram on the right. Without this patient's proactive health-seeking behaviors, both of these cancers would have gone undiagnosed and may have resulted in poorer prognosis. While acknowledging the rarity of this particular case, it serves as a poignant reminder of the critical role that screening methods play in male breast health. This includes destigmatizing breast cancer among the male population, acknowledging atypical presentations of breast cancer, and adhering to imaging guidelines. Thus, ultimately improving clinical outcomes for those affected.

CV-41

Unmasking the Hidden Path: Navigating the Challenges of Persistent Left Superior Vena Cava in Central Venous Access

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Persistent left superior vena cava (PLSVC) is a rare congenital vascular anomaly, with a prevalence of less than 0.5% in the general population. Though typically asymptomatic, PLSVC can complicate procedures requiring central venous access, often being identified incidentally during such interventions. We report the case of a 41-year-old male with a complex medical history, including end-stage renal disease (ESRD) on renal replacement therapy, arterial hypertension, and insulin-dependent diabetes mellitus, in whom PLSVC was unexpectedly discovered during the insertion of a hemodialysis catheter.

The patient, who had been receiving dialysis via a right internal jugular (IJ) tunneled hemodialysis (HD) catheter, presented with spontaneous catheter dislodgement. To minimize the risk of infection, a decision was made to place a new catheter in the left IJ vein. Initial ultrasound-guided cannulation was uncomplicated, but fluoroscopic imaging revealed an unusual course of the guidewire, which failed to traverse the expected venous pathway through the left innominate vein and remained in the left hemithorax. This raised concern for inadvertent carotid artery cannulation, prompting the procedure to be aborted and subsequently repeated. However, the same aberrant guidewire trajectory was observed. A superior vena cava venogram was performed, confirming the diagnosis of PLSVC. The catheter was then successfully placed without further complications.

PLSVC results from the incomplete regression of the left anterior cardinal vein during embryogenesis, leading to the persistence of a venous structure that drains into the right atrium via the coronary sinus. In this case, the presence of PLSVC did not result in significant hemodynamic compromise or prior clinical symptoms. Nonetheless, the anomaly necessitated immediate modification of the catheter placement technique to ensure accurate and safe completion of the procedure.

The recognition of PLSVC is clinically significant, particularly in the context of central venous catheterization. Failure to identify this anomaly can lead to catheter misplacement, inadequate venous drainage, and an increased risk of vascular injury. Additionally, PLSVC may pose challenges in the placement of pacemaker or defibrillator leads and may require alternative surgical approaches in procedures involving the superior vena cava or coronary sinus.

This case highlights the importance of thorough pre-procedural evaluation and an awareness of vascular anomalies such as PLSVC, especially in patients with complex medical histories. A high index of suspicion and adaptability in procedural planning are critical to avoiding complications and ensuring optimal patient outcomes. The documentation of rare congenital anomalies like PLSVC contributes to a deeper understanding of their implications in clinical practice and underscores the necessity of personalized procedural strategies in affected patients.

CV-42

High-Grade B-Cell Lymphoma of the Small Bowel Presenting as a Bilateral Gingival Mass and Mandibular Paresthesia

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Introduction: Malignant lymphoma, defined as tumors of the lymphatic system, can be classified into Hodgkin's lymphoma (HL) or Non-Hodgkin's lymphoma (NHL). While NHL commonly arises within lymph nodules, extranodal NHL sites are also observed, with the gastrointestinal (GI) tract being the most frequent extranodal site. However, lymphomas are a rare cause of malignant neoplasms in the GI tract. Other extranodal NHL sites include the skin, lungs, and, rarely, the oral cavity. Among all the subtypes of NHL, diffuse large B-Cell type is the most prevalent. Small bowel NHL predominantly affects older or immunocompromised individuals, with typical symptoms including abdominal distention and fullness. Nevertheless, unusual presentations, such as gingival swelling and mandibular paresthesia, have been documented in case reports.

Case presentation: A 36-year-old male with a past medical history of uncontrolled hypertension presented to the emergency department due to worsening mandibular and lower lip numbness. Initially, the patient consulted his dentist, who attributed the symptoms to a broken tooth, which was subsequently extracted. When symptoms failed to improve, the dentist prescribed Ibuprofen 800mg and Amoxicillin 500mg every 6 hours, which the patient adhered to for 7 days. Despite this treatment, the patient started presenting additional symptoms, including nausea, vomiting, abdominal bloating, fullness, early satiety, decreased appetite, increased difficulty urinating, diarrhea, and hematochezia. Additionally, he lost approximately 30 lbs., had night sweats, and febrile episodes.

Upon arrival, a physical examination revealed hyperactive bowel sounds and a globose, distended abdomen which was soft, depressible, and non-tender. There was no rebound, guarding upon palpation, palpable masses, or organomegaly. Intraoral examination identified bilateral swollen and tender gingival masses adjacent to lower molars and bilateral mandibular and lower lip paresthesia. Computed Tomography (CT) scan demonstrated extensive innumerable soft tissue nodules seen throughout the omentum and mesentery and focal dilation of the small bowel suggestive of small bowel lymphoma with extensive peritoneal lymphomatosis. A CT-guided biopsy revealed high-grade B-Cell lymphoma, a unique subset of diffuse large B-Cell lymphoma (DLBCL). The patient's condition was complicated by a progressive abdominal distension, leading to respiratory compromise and necessitating intubation with mechanical ventilation support. The patient was transferred to an Intensive Care Unit and followed by the Hematology and Oncology service.

This case highlights the diagnostic challenges associated with the rare presentations of small bowel non-Hodgkin lymphoma (NHL), particularly in younger patients. Small bowel NHL is a rare type of malignancy that usually presents in older patients. Histologically, it commonly presents as diffuse large B-Cell lymphoma. Extranodal symptoms of NHL are present in the GI tract, the skin, lungs, and rarely, the oral cavity. We present a case of a young patient with small bowel high-grade B-Cell lymphoma. He presents with small bowel NHL, which comprises about 1 to 4% of all gastric malignancies. Additionally, NHL involvement in the oral cavity accounts for only 0.5 to 1% of cases reported in the literature. Thus, this case showcases the evolution of a rare presentation of small bowel lymphoma that can be used to guide diagnosis for future patients with similar symptoms.

CV-43

Revealing Neurosarcoidosis after COVID-19 Illness and Vaccine: A Case Report

Viviana Hernández, MD; Nicole Méndez, MD; Jaime Chévere, MD; Angel Charriez, MD; Advisor: Juan C. Arraut, MD

Sarcoidosis, also known as Besnier–Boeck–Schaumann disease, is a multisystemic disease of unknown etiology and incompletely understood pathophysiology characterized by the formation of granulomas, classically, non-caseating granulomas. Neurologic complications occur in 5 to 10 percent of patients with sarcoidosis. When neurologic symptoms are present in the setting of sarcoidosis, neurosarcoidosis is a differential diagnosis that should be strongly considered. About half of patients with sarcoidosis are initially diagnosed by the time neurologic manifestations present.

SARS-CoV-2 infection (COVID-19) has been known to cause a variety of severe complications. Additionally, COVID-19 has been associated with the exacerbation of inflammatory conditions and immune disorders. This case report illustrates when neurosarcoidosis should be considered on differential diagnosis and how a patient's history of COVID-19 illness and COVID-19 vaccine administration should be considered.

64-year-old female developed chronic neurologic manifestations after being critically ill from COVID-19 on July 2022 which worsened after receiving COVID-19 bivalent vaccine on November 2022. Symptoms reported were vertigo, vision disturbance, nausea, vomiting, headache, ataxia and worsened hearing loss. Brain MRI with contrast showed leptomeningeal enhancement attenuated at cerebellar regions. At hospital admission on February 2023, she received extensive workup after lumbar puncture procedure and cerebral spinal fluid (CSF) examination presented abnormal findings of increased white blood cells, red blood cells and protein with low glucose level. Her chest CT scan was abnormal, prompting a lymph node biopsy that was consistent with non-necrotizing granulomas with additional mediastinal & hilar lymph nodes enlargement, compatible radiographically and clinically with neurosarcoidosis. After targeted treatment with Prednisone and Methotrexate were implemented, neurological manifestations improved, and the patient was discharged home.

While neurological manifestations are well known clinical presentations of neurosarcoidosis, treating clinicians should consider neurosacoidosis in clinically challenging cases when COVID-19 illness and/or COVID-19 vaccine administration is present in medical history. With COVID-19 illness and vaccine becoming very common these days, further research should be developed to consider COVID-19 involvement in unmasking or triggering present or de novo diagnosis of systemic inflammatory disease such as neurosarcoidosis.

CV-44

Recurrent Pleural Effusion from Rare Yellow Nail Syndrome: Case Presentation

Yanela Hernández, MD; Verónica Abraham, MD; Alvaro Aranda, MD

Yellow Nail Syndrome (YNS) is an extremely rare diagnosis with fewer than 400 published cases. Even though YNS has a dominant inheritance pattern, there is no direct genetic evidence. It affects both genders equally and it often manifests after the age of fifty, though there have been reports of congenital, juvenile and familial forms. The diagnosis of YNS is based on three clinical characteristics: Yellow nail syndrome, respiratory tract involvement (56-71%), and lymphedema (29-80%). Only two of them are required for its diagnosis.

The exact cause of YNS is unknown, but it is believed to be a result of abnormalities in the lymphatic system. The yellow discoloration of the nails is due to the accumulation of lipids within the nail plate, while lymphedema is the swelling of tissues due to the buildup of lymph fluid. Respiratory symptoms may include chronic cough, bronchiectasis, and pleural effusions. Diagnosis of YNS is typically based on a thorough physical examination, medical history, and nail abnormalities. Differential diagnosis should rule out cardiac conditions, onychomycosis.

Treatment of Yellow Nail Syndrome focuses on managing the symptoms and improving the patient's quality of life. Lymphatic drainage techniques may be employed to reduce swelling and improve lymphatic function. Respiratory symptoms can be managed with medications such as bronchodilators and antibiotics, as well as lifestyle modifications such as smoking cessation and regular exercise. In severe cases, surgical intervention may be necessary to treat complications such as recurrent pleural effusions.

Case: 73 years old woman, former smoker, with history of Hypertension, Diabetes, Hyperlipidemia, Ischemic Cardiac Disease, HFrEF with 35-40 % by TTE, Pulmonary Hypertension and Bilateral Recurrent Pleural Effusion which required multiple thoracentesis. She also had a positive test result for Antinuclear antibodies.

Patient presented with yellow nails (fingers and toes), dyspnea and bilateral pleural effusions. She required supplemental oxygen by nasal cannula. After several therapeutic & diagnostic procedures (1 to 1.5 L); the last procedure was placement of the Aspira pleural catheter (Tunnel pleural catheter) on the right side.

Consider this syndrome YNS as part of the differential diagnosis when a patient presents with recurrent pleural effusion and yellow nails. Lymphedema is difficult to diagnose, and this patient could develop lymphedema in the future. It is also important to consider the possible association of YNS and these diseases: autoimmune diseases, cancer, and paraneoplastic syndromes.

At the present moment this patient does not have a known cause. Research is currently underway to find a cause then to find a possible cure.

CV-45

Ozone Therapy: Are You Aware of the Risks: Case Presentation.

Yanela Hernández, MD; Francisco Del Olmo, MD

Chronic conditions remain challenging due to poor responses to traditional treatments, high costs, side effects, and non-adherence. As a result, patients search for alternatives in treatment including ozone(O3) . This treatment has been controversial. During many years, there have been postulations about potential improvement in blood circulation , boost of immune system, antioxidant and/or anti-inflammatory properties. Some healthcare professionals has been in favor of this treatment for the management of infection, arthritis, and pain; among others. The treatment could be administered topical, vaginally, rectally, intramuscularly, subcutaneously, orally and intravenously, However, knowledge about complications is limited .

We share the case of A 79 y/o man former smoker with past medical history of Asthma/COPD, HFrEF 46%, CABG, CKD, Diabetes, OSA, dyslipidemia, and arterial hypertension who visited ER after presenting with progressive shortness of breath and leg edema. Symptoms occurred progressively within 24 hours after receiving ozone therapy for hip pain. Infectious workup was negative. Laboratory demonstrated respiratory alkalosis, hypoxemia and elevated BNP levels. Radiography was consistent with bilateral pulmonary edema and effusion. He was successfully treated with IV nitrates diuretics and thoracentesis.

Alternative treatments are emerging for the management of multiple diseases possibly affecting populations with healthcare treatment disparities. Despite FDA recommendations against the use of ozone therapy, the same is still being used by some practitioners. Causality is attributed to severe oxidative stress activating nuclear transcriptional factor kappa B,with inflammatory response and tissue injury via the production of COX2, PGE2, and cytokines. Proinflammatory pathways may increase neutrophil infiltration causing more damage. Including alveolar capillary blood barrier dysfunction leading to edema. Inhalation is highly toxic to the airways. There is a lack of clinical trial studies addressing is limited in regard to the benefits, risks and contraindications. Serious complications have been reported such as pulmonary edema, air embolisms, sepsis and death. The role of primary care physician and hospitalist is of utmost importance for the management and prevention of further events.

Ozone therapy is being provided as an alternative in treatment. Yet , there is not enough information about this medication. Early identification and prevention of complications is crucial.

CV-46

Acute Pericarditis: the red flag to identifying systemic diseases

Yarely Gierbolini, MD; Sharolyn Velázquez, MD

Acute pericarditis is the most prevalent condition affecting the pericardium, accounting for 0.1-0.2% of hospital admissions and 5% of emergency department visits for nonischemic chest pain. The condition may either be an isolated process or the initial indication of an underlying systemic disorder. Etiologies include viral, bacterial, fungal infections, myocardial infarction, surgery, malignancy, trauma, medications, and autoimmune diseases. The clinical presentation is diverse, often depending on the cause, but key manifestations include sharp, pleuritic chest pain alleviated by sitting forward, pericardial friction rub, electrocardiogram (ECG) changes (notably widespread ST elevation and PR depression), and pericardial effusion. Here, we present a case of acute pericarditis in a patient with uncontrolled thyrotoxicosis, successfully managed with appropriate treatment.

A 73-year-old male with a history of hypertension, type 2 diabetes mellitus, and hypothyroidism presented to the emergency department with a one-week history of exertional dyspnea, palpitations, and substernal chest pain exacerbated by deep breathing, movement, and coughing. He also reported two weeks of watery diarrhea, unintentional weight loss, and fatigue over the past month. Physical examination revealed a febrile patient without signs of hemodynamic instability or volume overload. An ECG showed new-onset atrial fibrillation with a rapid ventricular response, alongside diffuse concave ST-segment elevation in the inferior and anterolateral leads, consistent with acute pericarditis. Transthoracic echocardiography confirmed mild posterior pericardial effusion. Thyroid ultrasound revealed an enlarged, heterogeneous gland with increased vascularity. Laboratory investigations showed significantly elevated free T3 (7.1 pg/mL), free T4 (3.6 ng/dL), and suppressed TSH (<0.005 uIU). Inflammatory markers were raised with ESR at 41 mm/hr and CRP >300 mg/L. Autoimmune markers (ANA, anti-dsDNA) and viral serologies were negative, and stool studies were unremarkable. Given the absence of thyroid storm criteria and the identification of severe hyperthyroidism secondary to non-compliance with Methimazole therapy, the patient was managed with escalated doses of Methimazole and a beta-blocker. Clinical response was monitored, with chest pain subsiding within 3-4 days, resolution of diarrhea, normalization of ST-segments, and reversion of atrial fibrillation to sinus rhythm. Follow-up imaging showed a reduction in pericardial effusion. The patient was discharged on Methimazole and Propranolol, and follow-up visits showed no recurrence of symptoms. The diagnosis of acute pericarditis secondary to thyrotoxicosis (Graves' disease) was confirmed based on clinical and laboratory findings.

Acute pericarditis is a common clinical syndrome, frequently attributed to viral infections, but other etiologies must be considered. This case underscores the importance of recognizing the potential link between Graves' disease and pericarditis. Although the exact pathophysiological mechanism remains unclear, an autoimmune reaction is the most widely accepted hypothesis. Management in this case focused on controlling the underlying thyrotoxicosis, alongside symptomatic treatment of pericarditis. The patient's favorable outcome highlights the need for early recognition and appropriate management of this association.

CV-47

HLH Syndrome in the setting of B-cell ALL: Case Report

Zydnia Piñeiro, MD; P. Rivas, MD; W. Marrero, MD; M. Gines, MD; G. González, MD; M. Ruiz, MD

Hemophagocytic Lymphohistiocytosis syndrome is a hyperinflammatory condition caused by immune system dysregulation that is considered life-threatening. Symptoms include cytopenias, febrile episodes, and hepatosplenomegaly. HLH etiologies include genetic causes and secondary presentations considered reactive, including infections, autoimmune, medication-induced, and neoplastic processes, commonly hematological malignancies, such as in this case.

The patient is a 42-year-old male with a medical history remarkable for chronic back pain and was recently diagnosed with B-cell ALL Ph (-) after debuting with anemia at 5.6. The patient was on his second cycle of Hyper CVAD chemotherapy when he was transferred to the ICU due to septic shock requiring vasopressor support. This shock was secondary to EColi Bacteremia. After arriving at the ICU, the patient started presenting with dyspnea, shortness of breath, and respiratory distress, progressing to ARF type 1 requiring HFNC. Thorax CT showed multifocal patchy ground glass opacities in the lung bases, right middle lobe, and upper lobe, suggesting aspiration pneumonia vs alveolar hemorrhage. Associated with this, the patient also presented with fever episodes, pancytopenia, and splenomegaly by physical examination and imagining. Despite goal-directed medical therapy and cultures showing pan-sensitive E-Coli, other causes for persistent shock were explored. Considering patients with pre-existing malignancies, HLH was high on the differential diagnosis list. HLH workup was ordered. Due to worsening respiratory function and CT suggestive of DAH, treatment with Novo seven and Aminocaproic acid was started, alongside management and high-dose corticosteroids for HLH. Upon further workup, the patient fulfilled diagnostic criteria for HLD, including persistent pancytopenia, ferritin level at 2048, splenomegaly by physical exam and per imaging, fever, triglycerides at 275, and IL 2 receptor at 5415 pg/mL.

After meeting the criteria for HLH, the patient received Methylprednisolone 1 G for three days, which was later tapered down as the patient's condition improved. After completing 14 days of IV antibiotics and steroid tapering, the clinical picture improved, and where the patient was successfully weaned off vasopressor support. Once clinical stability criteria were met, the patient was transferred to the ward to continue treatment. This case report helps identify the aggressive nature of HLH. Where if the condition exists, and the patient has a worsening condition despite appropriate treatment, HLH should be considered as a possible diagnosis in critically ill patients. Furthermore, the benefit of steroids and prompt treatment should never be delayed once HLH is suspected. This report, in turn, helps serve as an image of possible complications related to leukemia.

RESEARCH ABSTRACTS			
POSTER	**AUTHOR**	**PROGRAM**	**Abstract Title**
CR-01	Isabel Castellanos Castillo	Universidad Central del Caribe School of Medicine, Bayamón	Access to Care: Examining Wait Times for Health Specialist Appointments Across Puerto Rico's Medical Specialties and Regions
CR-02	Luis Colón González	Saint Luke's Episcopal Hospital, Ponce	Comparing Outcomes Among Radial Versus Femoral Access in Percutaneous Coronary Intervention (PCI) in ST Elevation Myocardial Infarction (STEMI).
CR-03	Diego Díaz Mayor	VA Caribbean Healthcare System, San Juan	Assessing the Sleep Profiles and Quality of Life in a Hispanic IBD Population Living in Puerto Rico
CR-04	Víctor Gómez	Auxilio Mutuo San Pablo Hospital, Bayamón	Safety and Efficacy of Immunoglobulin in Dermatomyositis and Polymyositis: A meta-analysis of randomized controlled trials with trial sequential analysis
CR-05	Wilcar Otero-Morales	Saint Luke's Episcopal Hospital, Ponce	Evaluating the Efficacy of Enteral Midodrine on Patients with Intravenous Vasopressors on Decreasing Hospital Days Stay and Other Factors

CR-01

Access to Care: Examining Wait Times for Health Specialist Appointments Across Puerto Rico's Medical Specialties and Regions

Isabel Castellanos Castillo; María José Sánchez, Cecilia V. Olmo López, Hillary S. Telemin Vilorio , Jerry Cruz-Rodríguez, Gabriel A. Jiménez & Bárbara Riestra Candelaria

Introduction

In recent years, Puerto Rico's healthcare system has encountered substantial challenges, marked by a concerning decline in healthcare workforce. In 2009, the Island had 14,500 physicians, but by 2020, this number had decreased to approximately 9,000 [1].The physician shortage has further strained the accessibility to healthcare. A 2022 study by the Puerto Rico Institute of Statistics revealed that over 80% of adult patients reported waiting more than four weeks to consult a specialist [2]. The increase in waiting times is driven by a complex and deeply rooted set of systemic issues. Recent studies reveal that these issues are significantly driven by limited availability of specialists, insufficiencies in the referral process, and the fragmentation of the healthcare system. According to the Puerto Rico Medical Association's 2020 analysis, there were only 2.5 physicians per 1,000 Puerto Ricans, leading to extended wait times for appointments, including those for urgent care [3]. The study's purpose is to investigate the wait times for patients to obtain appointments in several major medical specialties, including Physiatry, Allergy and Immunology, Endocrinology, Orthopedics, Neurology, and Rheumatology. Since many conditions within these specialties are highly prevalent on the island, timely access to healthcare is crucial for patients.

Methodology

Over the course of one year, the study team systematically contacted and interviewed 193 clinics across six specialties: Physiatry, Allergy, Endocrinology, Orthopedics, Neurology, and Rheumatology. Clinics provided comprehensive data on new patient appointment wait times (in weeks), changes compared from 2020 to 2022, and the volume of new appointment requests. The information was categorized by specialty and evaluated across seven geographical regions—Arecibo, Bayamón, Caguas, Fajardo, Mayagüez, Metropolitan Area (Metro), and Ponce—encompassing all 78 municipalities in Puerto Rico. An analysis of variance (ANOVA) was conducted to evaluate significant differences in wait times among the specialties.

Results

The ANOVA analysis revealed significant differences in wait times for medical appointments across the various specialties. Specifically, Endocrinology had the longest average wait time at 18 weeks, followed by Neurology with 15 weeks. Conversely, Orthopedics and Physiatry had shorter wait times of 7 and 6 weeks, respectively, though these durations were still notably extended.

Discussion

The results of our study reveal a pressing crisis in Puerto Rico's health care system: extended wait times for specialist appointments. Endocrinology experiences the most severe delays, with an average wait time of 18 weeks, closely followed by Neurology at 15 weeks. Even though Orthopedics and Physiatry report shorter wait times of 7 and 6 weeks, respectively, these durations still represent significant limitations to prompt care. The statistical disparities across various regions underscore the widespread issue impacting the entire Island. Addressing these delays is critical for rectifying the systemic issues that influence the healthcare workforce shortage and ensuring timely access to care. Immediate, targeted interventions are required to mitigate these delays and improve chronic disease management, health outcomes and overall well-being of the Puerto Rican population.

CR-02

Comparing outcomes among Radial versus Femoral access in Percutaneous Coronary Intervention (PCI) in ST Elevation Myocardial Infarction (STEMI).

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Introduction: Percutaneous Coronary Intervention (PCI) is the most common and effective reperfusion strategy known to date and can be performed by either radial or femoral access. Although the goal of either approach is prompt reperfusion, both are associated to a variety of complications. Several studies have compared outcomes of either approach adjusting for age, gender and comorbidities; although many favor the radial approach, some remain inconclusive. To the best of our knowledge, no quality improvement protocols have been implemented to date in our institution or Puerto Rico to establish an association. Our clinical observation suggested the hypothesis that Radial PCI access presents less complications such as decrease hospital duration, risk of bleeding, vascular complications and mortality.

Methods: All patients admitted from urban hospital at Ponce, Puerto Rico (Hispanic population of southern region of Puerto Rico), during 2022 and 2023 with diagnosis of ST Elevation Myocardial Infarction (STEMI) were enrolled in a cross-sectional record review study. Age ranges from 21 to 90-year-old male and female. Randomization was done using a statistical program that created reports of randomized cases for 311 patients. Variables used for the study included: Year of admission from 2022-2023, Gender, Age, BMI, Comorbidities such as Diabetes, Hypertension, Obesity, CKD, AKI, ESRD, Heart Failure, Chronic Obstructive Pulmonary Disease, Thrombocytopenia, and Anemia. Estimated blood loss during procedure was noted. Access site complications included Thrombolysis in Myocardial Infarction (TIMI) bleeding classification, Hematoma, and Pseudoaneurysm. Vascular process and mortality rates were studied, among others. Information stored in REDCap for data recollection, an HIPPA compliant database. IBM SPSS for statistical analysis. No consent form required due to no survey conducted and no identifiers were taken for the patient. Limitations were reduced by recollecting data that was confirmed as completed upon record review.

Results: 311 patient enrolled in the cross-sectional record review study. Results, were statistically significant for minimal bleeding with a p-value of 0.01791, first-attempt femoral group (194) having a higher incidence of minor bleeding compared to the first-attempt radial group (84). First-attempt femoral group (7) had a slightly higher incidence of pseudoaneurysm complications; the difference was not statistically significant (p-value 0.1923), when compared to the first-radial group (0). Results suggest, with a p-value = 0.001, that the first-attempt radial group (0) is associated with a significantly lower risk of hematoma complications compared to the first-attempt femoral group (33), highlighting the potential benefits of radial access in reducing hematoma-related complications. Results indicate a statistically significant, p-value = 0.0012, higher mortality rate in the first-attempt femoral group (26) compared with the first-attempt radial group (1), indicating a strong association between type of access and rate of mortality. The odds of mortality are significantly higher in the first attempt femoral group (odds ratio: 11.81), indicating a strong association between access type and mortality.

Conclusion: Radial PCI presents a lower incidence of minor bleeding, hematoma and 30-day-all-cause-mortality. The decrease in complications and the higher success rate support the radial approach as the preferred choice of access.

CR-03

Assessing the sleep profiles and quality of life in a Hispanic IBD population living in Puerto Rico

Diego Diaz Mayor; Soto-González, Alondra; Verge-Molina, Nathalia; Sánchez-Orive, Patricia; Torres, Ester A.

An adequate sleep hygiene and quality improves the immunological response, psychological health, and overall outcomes in patients with Inflammatory Bowel Disease (IBD). The presence of sleep disturbances in these patietns is being increasingly reported in multiple countries, showing how it is emerging as a significant extraintestinal manifestation. Despite its increasing prevalence in IBD patients, the presence of sleep disturbances are usually overlooked by practitioners, becoming an aspect of the patients disease that is at risk of remaining untreated. This study aimed to evaluate the sleep profile, quality of sleep, and quality of life among a Hispanic IBD population in Puerto Rico.

Adults with confirmed IBD were recruited during a scheduled visit to an IBD clinic. Socio-demographic and clinical data, including symptoms, surgeries, and medications, were collected in a General IBD questionnaire. Sleep disturbances were evaluated with the Pittsburg Sleep Quality Index (PSQI), a questionnaire divided in 7 domains where a score of 5 or higher indicates poor sleep. Health-Related Quality of life (HRQoL) was assessed with the IBD Questionnaire (IBDQ), composed of 4 domains in which a combined score of less than 170 indicates poor quality of life. Chi-square and Fisher's test were used to describe each nominal variable. Wilcoxon-Mann-Whitney analyses and Spearman correlations were used to test effects and associations between variables and domains. This study is approved by the MSC-IRB.

Of the 184 participants, PSQI and IBDQ scores were obtained from 176 and 134 subjects, respectively. Most were female (54.51%) and had CD (70.0%). Poor sleep was identified in 74.43%, and poor quality of life in 54.9%. Those with poor sleep were associated with having a poor quality of life ($p=0.003$), as well as scoring low on all 4 domains of the IBDQ: bowel symptoms ($p=0.02$), emotional function ($p=0.0001$), social function ($p=0.0005$), and systemic symptoms ($p=0.000$). Those with poor quality of life were associated with having high scores in the PSQI domains of sleep disturbances ($p=0.004$), sleep latency ($p=0.0009$), daytime dysfunction ($p=0.03$), and the use of sleep medications ($p=0.002$). No statistical significance was found between PSQI and presence of bowel symptoms, IBD medication types, surgeries, or IBD subclass.

This Hispanic IBD cohort of mostly females in Puerto Rico was classified as having poor quality of life, which may be affected by the concurrent presence of poor sleep in these patients. Those with poor sleep who reported having low HRQoL attributed this to multiple causes, both to physical symptoms cause by IBD or comorbidities, and to psychosocial causes that may be the result of the distress that the disease ensues on the individual. The lack of association between medication and surgeries with poor sleep is consistent with the findings of other populations. This suggests that the presence of sleep disturbances in IBD patients may be an intrinsic characteristic of the disease and not dependent on specific treatments, comorbidities, or genetic factors. Identifying the domains in which poor sleep and HRQoL dissect provides insight as to specific areas to target for future treatment strategies.

CR-04

Safety and Efficacy of Immunoglobulin in Dermatomyositis and Polymiositis: A meta-analysis of randomized controlled trials with trial sequential analysis

Víctor Gómez; Hiram Morález González, Christian J Cruz, Lourdes Soto, Chantal Coffy, Pablo R Bisono Rodríguez

Introduction: Steroids have traditionally been used as a first-line treatment for patients with polymyositis (PM) and dermatomyositis (DM), and approximately 80% of patients exhibit a good response. However, the remainder shows either no or incomplete response, even with the use of alternative therapies. The focus of this study is to determine the efficacy and safety of IVIG as an alternative to steroids in the treatment of DM and PM.

Methods: PubMed, Embase, and the Cochrane Library were systematically searched for randomized controlled trials (RCTs) comparing intravenous immunoglobulin (IVIG) versus placebo. Efficacy was assessed through the total improvement score (TIS), manual muscle testing (MMT) score, Medical Research Council (MRC) scale, and creatine kinase (CK). We used Cohen's d to standardize effect sizes; each study's effect size was calculated as the standardized mean difference between the treatment and control groups. We also examined safety endpoints. Pooled mean differences (MD) or risk ratios (RR) for the most common adverse events reported were computed for continuous and binary outcomes, respectively, under a random-effects model with a 95% confidence interval (CI). Trial Sequential Analysis (TSA) was performed using the Copenhagen Trial Sequential Analysis software to assess the robustness of the cumulative evidence and adjust for random errors.

Results: Five studies were included for a total of 204 patients, of whom 55 (26.9%) were male. The mean age was 47.36 years ± 37.35. The pooled estimate under the random-effects model indicated a moderate overall effect size (Cohen's d = 0.55; 95% CI 0.01 to 1.09). Individual studies showed varying effect sizes, with two studies demonstrating large effects (Cohen's d = 1.19), while other studies indicated small to negligible effects. In subgroup analysis, IVIG showed a significant decrease in MMT (MD = -6.73; 95% CI -15.84 to 2.37; p = 0.02) and TIS (MD = -26.80; 95% CI -35.82 to -17.78; p < 0.001) compared to placebo. In contrast, it showed improvement, but without significance, in MRC (MD = -1.77; 95% CI -8.16 to 4.63; p = 0.19) and CK (MD = -0.10 U/L; 95% CI -0.90 to 0.69; p = 0.58) compared to placebo. IVIG was well tolerated but suggested a significantly higher risk of headaches (RR = 4.68; 95% CI 2.39 to 9.20; p < 0.001) and a nonsignificant higher risk of serious adverse effects (RR = 5.18; 95% CI 0.63 to 42.50; p = 0.13) compared to placebo. In the trial sequential analysis, the cumulative Z-curve did not cross the required information size boundary of 966 patients, indicating that the current evidence is insufficient to draw definitive conclusions.

Conclusion: Our meta-analysis of RCTs showed an overall improvement in the efficacy of IVIG and a significant decrease in MMT and TIS in dermatomyositis and polymyositis patients treated with IVIG. There were no significant safety differences in serious adverse effects, although headaches were more common in patients treated with IVIG. TSA indicates that while the treatment may be effective, more standardized clinical trials are needed to achieve statistical significance.

CR-05

Evaluating the efficacy of enteral Midodrine on patients with intravenous vasopressors on decreasing hospital days stay and other factors.

Wilcar Otero-Morales; Wanda Cubero Cruz; Kevin A. Rodríguez Perez; Andrea Rodríguez; Dev R. Boodoosingh, MD

Midodrine, an alpha-1 adrenergic agonist, is primarily used to manage orthostatic hypotension but is often administered off-label to patients with hypotension or circulatory shock, in conjunction with intravenous (IV) vasopressors. This study aims to evaluate whether enteral Midodrine, used alongside IV vasopressors, affects the duration of hospital and Intensive Care Unit (ICU) stays and to assess demographic factors influencing its efficacy.

We conducted a retrospective analysis of 295 patients, admitted between 2019 and 2023, with circulatory shock who were treated with both Midodrine and IV vasopressors. The primary outcome was the length of hospital and ICU stays, while secondary outcomes included survival rates and demographic influences. Statistical analyses, including chi-square tests and survival analysis, were performed to determine associations and trends, with a significance threshold set at $P<0.05$.

The analysis revealed that patients receiving Midodrine had a significantly longer mean duration of ICU and hospital stays, compared to those who did not receive Midodrine ($P<0.001$). Despite this increased length of stay, survival analysis indicated that patients treated with Midodrine had improved survival rates, relative to those who received only IV vasopressors ($P<0.001$). Further demographic analysis showed that sex and age significantly influenced the outcomes. Specifically, female patients on Midodrine had a longer mean stay compared to their male counterparts ($P<0.04$), whereas older female patients exhibited a trend towards a reduced mean stay ($P<0.03$).

The use of enteral Midodrine in conjunction with IV vasopressors is associated with a longer duration of ICU and hospital stays but also correlates with improved survival outcomes. Demographic factors such as sex and age play a significant role in the response to Midodrine therapy, suggesting that individualized treatment strategies may be beneficial. This study underscores the need for further research to confirm these findings and explore the potential benefits of Midodrine in managing circulatory shock and its impact on patient outcomes in hospital settings.