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2021 Resident and Medical Student Forum

E- Poster Presentations

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American College of Physicians

Medical Student Clinical Vignette

Medical Student Clinical Vignette

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Subcutaneous Panniculitis-Like T-Cell Lymphoma Presenting as Recurrent Fevers and Painful Subcutaneous Nodules

Introduction:

Subcutaneous panniculitis-like T-cell lymphoma (SPTCL) is an exceedingly rare condition accounting for less than 1% of non-Hodgkin's lymphomas. Significant advances in our understanding of this pathology have been made since its first description in 1991. Global epidemiology studies elicit certain risk factors, such as female sex and Asian descent. It bears a favorable prognosis with a 5-year survival rate as high as 91%, but can be difficult to diagnose given the extensive differential for panniculitis including erythema nodosum, benign panniculitis, and lupus panniculitis, the latter of which can be especially challenging to distinguish. This unfortunately delays time to diagnosis and appropriate treatment for the patient as well as incurring excessive hospital resources.

Case Report:

A 40-year-old Chinese female with a past medical history of hyperthyroidism with prior thyroidectomy presented with a two-week history of cyclical fevers and painful subcutaneous nodules with superimposing erythema. Four months prior to presentation, the patient reported three painful abdominal â€œbumpsâ€, which resolved after a course of trimethoprim/sulfamethoxazole. Initial blood cultures grew gram positive cocci, later determined to be Staph hominis and Staph epidermis. The patient was found hypotensive, tachycardic, febrile at 101.8 F, and had a leukocyte count of 3.5 K/Î¼l; the patient met the criteria for sepsis and was admitted. The skin lesions at this point were considered erythema nodosum. Vancomycin was started for presumed bacteremia, but subsequent blood cultures did not demonstrate any bacterial growth. She continued to have cyclical fevers and painful subcutaneous nodules on the left lower anterior abdominal wall, mons pubis, right popliteal fossa, and medial left and right thighs. Echocardiograms were negative for any signs of endocarditis. A gallium scan was then obtained that showed multiple foci of activity in the soft tissues of the chest, abdomen, pelvis, and thighs, corresponding to the location of the skin lesions.

A core biopsy was obtained and showed CD4+ and CD8+ T-cells rimming adipocytes with a high Ki-67 proliferation index, consistent with SPTCL, not erythema nodosum. Initiation of a multiagent chemotherapy regimen consisting of cyclophosphamide, doxorubicin, vincristine, and prednisone (CHOP therapy) subsequently resulted in resolution of the lesions and persistent fevers. The patient received a total of 6 cycles of chemotherapy. After her first chemotherapy treatment, she endorsed improvement of her symptoms with no fevers or pain around nodule sites. She continues to be followed by an outpatient oncologist.

Conclusion:

It is important to consider the diagnosis of SPTCL when a patient has painful, relapsing panniculitis-like lesions particularly on the trunk and lower extremities, persistent fever, or other systemic symptoms, as well as demographics including young adult, female gender, and Asian descent.

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Pancytopenia as a Result of Pernicious Anemia in the Setting of Vitiligo: A Case Report

Introduction

Vitiligo is a disorder of melanocyte destruction and skin depigmentation; it is associated with other autoimmune conditions, one of which under speculation is pernicious anemia. Pernicious anemia is a disorder of parietal cell destruction by autoantibodies causing failure to produce intrinsic factor, resulting in vitamin B12 malabsorption. Vitamin B12 indirectly plays a role in melanogenesis; it is a cofactor necessary for producing methionine, whose role is to generate S-adenosylmethionine (SAM), a methyl group donor for substrates. An important enzyme requiring methyl group donation from SAM is catechol-O-methyltransferase (COMT). COMT is responsible for detoxifying reactive intermediates within cells, including the melanosome. With vitamin B12 deficiency, methionine production is below reference range resulting in decreased SAM and an imbalance in redox homeostasis. The result is damage to the melanosome by reactive oxygen species and disruption to melanogenesis. We believe this disruption is associated with skin depigmentation and suggests a connection to pernicious anemia. Described is a female with a diagnosed history of vitiligo, who was found to have pancytopenia due to severe vitamin B12 deficiency from pernicious anemia.

Case Presentation

A 40-year old female from Dominican Republic with vitiligo presented with complaints of gradual onset generalized weakness and lightheadedness that was occasionally accompanied by palpitations. Laboratory testing was performed and revealed pancytopenia, with severe vitamin B12 deficiency, (<150 pg/mL). White blood cell count was low, 1.52 x 103/mcL, red blood cell count was low, 1.20 x 106/mcL and platelet count was low, 55 x 103/mcL. Vitamin B12 deficiency resulted in megaloblastic anemia which was disclosed in laboratory results as follows, hemoglobin, 4.2 g/dL and mean corpuscular volume, 117.2 fL. Further investigation showed a positive intrinsic factor blocking antibody and antiparietal cell antibody, suggesting pernicious anemia. The hematology/oncology team was consulted and a bone marrow biopsy was taken to rule out malignancy. The biopsy showed hypercellular marrow consisting predominantly of blasts, consistent with megaloblastic anemia. The patient was treated with a subcutaneous vitamin B12 load of 1000 mcg daily for 7 days; she was discharged on the third day of treatment and at that time her hemoglobin was uptrending with improvement of pancytopenia and clinical symptoms.

Discussion

Appreciating the relationship between vitiligo and pernicious anemia is beneficial in that patients can be supplemented with vitamin B12 at diagnosis, protecting the patient from future anemia and pancytopenia. And in the case of a vitiligo patient presenting with symptomatic anemia, recognition of pernicious anemia as a direct autoimmune association, allows the provider to consider vitamin B12 deficiency quickly. This decreases time to treatment for the patient, thereby reducing symptoms and hospital stay.

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Rare adult-subtype of a common childhood soft tissue carcinoma

Abstract

Rhabdomyosarcoma (RMS) is a common malignant soft tissue sarcoma of primitive mesenchymal cells primarily affecting children. However, it is rarely seen in adults, comprising <1% of adult solid tumor malignancies and 3% of soft tissue sarcomas.

Case Presentation

A 33 year old male without past medical history presented to the clinic with a painless mass in his left arm. He first noticed this lesion six months prior to seeking medical attention, delays occurred due to the Covid-19 pandemic. He denied weight loss, fatigue, night sweats, fever, chills. An expedited workup led to an MRI of the left arm which revealed an 8 cm multiseptated hemorrhagic lesion within the medial aspect of the triceps muscle within the distal arm. IR-guided biopsy of the lesion was positive for desmin, vimentin, and MyoD1, negative for NSE, SMA, MSA, MCK, S100, and CD45, and pending PAX 3 / FOXO1 gene for possible targeted therapy. He was diagnosed with poorly differentiated desmin positive sarcoma-alveolar rhabdomyosarcoma. CT scan of chest without contrast revealed multiple bilateral pulmonary nodules significant for metastatic disease. Chemotherapy was promptly started with vincristine, adriamycin, cyclophosphamide, alternating cycles with ifosfamide and etoposide. He continues to follow closely with his PCP and medical oncologist and has noticed the lesion to have decreased in size.

Discussion

RMS typically presents as a painless, enlarging mass.The two most common types of RMS are alveolar (ARMS) and embryonal (EMRS), alveolar being more common in the adult population. Positive nuclear staining for MyoD1 protein and Myogenin (Myf4) on immunohistochemistry is the gold standard of diagnosis. The incidence of metastasis in ARMS is directly proportional to tumor volume with metastasis noted in 74% of cases with lesions > 10cm. Lung is the most common location for metastasis. The treatment of RMS includes chemotherapy, radiotherapy, and surgical resection. A multimodal therapy in line with the pediatric RMS treatment guidelines yielded better survival and local control. However there is a clinical disparity in the survival rate between the adult and childhood version of RMS. Newer studies seek to use specific molecular markers for targeted therapy in hopes of further improving survival rates. The overall survival rate of RMS in adults is about 18 months, a worse prognosis compared to its childhood counterpart. Poor prognostic factors include age >35; size >5cm, pleomorphic and alveolar subtypes, extremity location, fusion gene positivity, infiltrative tumor, and metastatic presentation.

Conclusion

This case is to inform clinicians of the rare adult subtype of a common childhood cancer and highlight the importance of further research regarding its treatment modalities.

Medical Student Clinical Vignette

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Granulomatosis with polyangiitis masquerading as an unrelenting ear infection: A case report

Introduction:

Granulomatosis with polyangiitis (GPA) is an inflammatory vasculitis of small to medium sized vessels that presents with necrosis and granuloma formation. This systemic disease typically involves the upper respiratory tract, lungs, and kidneys; however, various other organ systems can be involved leading to great variability in the presentation of these patients.

Case report:

We report the case of a 44-year-old Caucasian woman with a recent admission for bilateral otitis media with gradual worsening despite trial of intravenous antibiotics and bilateral tympanostomy tube placement who presented to the hospital with tongue deviation, change in voice, dysphagia, ear and jaw pain, hearing loss and concerns for a worsening infection. She also reported a new dyspnea on exertion which started a week prior to presentation. Review of systems also revealed a history of photosensitivity.

CT thorax revealed bilateral hilar adenopathy and multifocal lung consolidations that appeared to be enlarging from her prior admission 2 weeks prior. CT head with contrast demonstrated evidence of bilateral otitis media and mastoiditis. CT angiography of the neck was obtained to rule out Lemierre's syndrome and revealed normal vascular anatomy.

Initial differential diagnoses included atypical infections including fungal or mycobacterial and paraneoplastic processes. She underwent a bronchoscopy with transbronchial biopsy of a hilar mass which showed extensive areas of necrotizing granulomatous. An autoimmune workup was positive for c-ANCA with elevated antiproteinase 3 antibody. Occult renal involvement was ruled out with a normal urine protein creatinine ratio.

This pattern of involvement was consistent with Granulomatosis with polyangiitis like ANCA vasculitis. Treatment was started with high dose methylprednisolone transitioned to oral prednisone and rituximab infusions on discharge. Nearly 2 months after discharge she reported significant improvement in her symptoms of dyspnea, otalgia, although with residual mixed hearing loss and vocal cord paralysis, with plan for continued treatment with glucocorticoids and rituximab infusions.

Discussion:

Due to the involvement of multiple organ systems, early diagnosis of GPA is difficult. The nasal cavity and paranasal sinuses are the most common sites of involvement, while otologic involvement is found in roughly 35% of cases. Lung nodules are frequently discovered in patients with GPA and should increase the suspicion for GPA. A high suspicion of GPA in those with recurrent and resistant otitis media or mastoiditis not responding to antibiotics with optimal duration and dosing is paramount. Sensorineural hearing loss and facial nerve paralysis may become permanent if the underlying disease is not treated promptly. Induction treatment for organ-damaging disease consists of glucocorticoids in combination with rituximab or cyclophosphamide until remission is achieved and maintenance therapy is begun. Our case highlights the importance of early recognition of the otologic manifestations of GPA and timely intervention which can be life-saving and organ sparing.

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SARCOIDOSIS WITH SECONDARY RECURRENT RIGHT-SIDED CHYLOTHORAX AND CHYLOUS ASCITES IN A CAUCASIAN MALE PATIENT

Background: Sarcoidosis commonly presents as interstitial lung disease, mostly affecting African-American women under 40-years old. This case report describes an atypical presentation of sarcoidosis in an older white male with recurrent chyle leakage into pleural space and abdominal cavity.

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Case Presentation: This is a 61-year-old white male, with a significant smoking history, diagnosed with sarcoidosis upon biopsy of an omental mass. He presented to the hospital ten months after his initial diagnosis with shortness of breath and a new large right-sided pleural effusion. The pleural fluid analysis was consistent with a chylothorax. He was readmitted three months later with worsening dyspnea on exertion and diagnosed with recurrent right-sided chylothorax. After failing conservative management, he underwent investigations via video-assisted thoracoscopy (VATS) and pleural biopsy. The lung biopsies found no malignancies and revealed non-caseating granulomas, confirming the known diagnosis of sarcoidosis as the cause of chylothorax. Afterwards, potential chyle leakage sites in the thoracic duct were ligated, and the right-lung pleural space was obliterated to reduce future pleural effusions. Post-operative octreotide therapy helped resolve chylothorax by decreasing output of pleural fluid and chyle into the pleural space. After discharge from the hospital, he continued to have recurrent right-sided pleural effusions that required multiple outpatient thoracenteses. Four months later, he developed chylous ascites that required a paracentesis. He was then referred to a tertiary center to manage his recurrent chylothorax, where he underwent a second thoracic duct ligation and talc pleurodesis. On follow-up visits and outpatient bedside ultrasound, he had a small right-sided pleural effusion but no evidence of ascites. He remains on chronic prednisone therapy.â€¯â€¯â€¯

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Conclusion: This is a novel presentation of sarcoidosis due to thoracic duct involvement leading to recurrent chylothorax and chylous ascites. Lymphadenopathy and inflammation from sarcoidosis may cause thoracic duct damage, resulting in chyle leakage into pleural space and abdominal cavity. In the absence of thoracic duct trauma and malignancy, sarcoidosis could be potential cause of a chylothorax. Managing this complication requires therapy with low-fat diet, octreotide, and prednisone. Management with thoracic duct ligation and pleurodesis is indicated when conservative treatments fail.

Medical Student Clinical Vignette

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Venous Air Embolism Related to a Central Venous Catheter: A Cautionary Tale

Introduction:

Venous air embolisms can occur when there is an abnormal connection between the atmosphere and veins, along with a positive air-to-blood pressure gradient. Atmospheric air that enters the circulation can be potentially catastrophic as it has the potential to enter the pulmonary circulation, form a paradoxical embolism, or enter the cerebral venous system. Here we present a case of a patient who developed an air embolism from self-removal of a central venous catheter.

Case:

An 81-year-old male presented with fever and lethargy after an emergency exploratory laparotomy, duodenotomy with oversewing of bleeding duodenal ulcers, placement of jejunostomy tube, and appendectomy. His past medical history was significant for chronic kidney disease, aortic valvular replacement, and coronary artery bypass graft. The following day, the patient pulled halfway out his left internal jugular central line while agitated and confused. He was then noted to be tachycardic, hypotensive, hypoxic and cyanotic. A STAT echocardiogram showed right ventricle dilation and reduced systolic function. A significant amount of air was also found in the RV, LA and LV due to the atrial septal defect (ASD) causing a right to left shunt. A chest X-ray showed no pneumothorax or infiltrates. Although there is a possibility of pulmonary embolism, anticoagulation was contraindicated due to recent GI bleeding and thrombocytopenia. The patient was placed in a supine position with high flow oxygen and was noted to quickly recover hemodynamically. Repeat echocardiogram showed resolution of his RV dysfunction without any evidence of air in the heart.

Discussion:

This case illustrates the importance of precautionary measures in patients who have a central venous catheter. Although rare, improper removal can introduce an air embolism. As in this case, the patient's large air embolism interfered with his cardiac function and also resulted in a paradoxical embolism due to the ASD. Air embolisms can present in various manners, such as cardiopulmonary involvement, focal neurologic deficits, and even death. When a patient is suspected to have an air embolism, proper management must be initiated as soon as possible to avoid additional emboli and end-organ damage. It is also important to utilize precautionary measures to avoid air embolisms from occurring in the first place, such as in instances where the catheter is improperly removed.

Conclusion:

Air embolisms are potentially catastrophic events that can be detrimental to patients. Increased awareness and precautionary measures should be made to avoid this complication.

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TREATMENT OF CHYLOTHORAX IN CHRONIC LYMPHOCYTIC LEUKEMIA WITH MR LYMPHANGIOGRAPHY AND GLUE EMBOLIZATION

Chylothorax is a rare occurrence in Chronic Lymphocytic Leukemia (CLL). This case reports successful glue embolization of the thoracic duct leak using MR lymphangiography. The patient has a history of CLL and developed dyspnea that was exacerbated by local wildfires. He went to the emergency room where he was receiving treatment for his CLL and was found to have an effusion, which they diuresed. He was discharged home only for the effusion to return a few weeks later. He returned to the emergency room where the thoracentesis showed that it was chylous effusion. The clinicians installed two indwelling pleural catheters (PleuRx ports) and discharged the patient with instructions to drain the chylous effusion, draining between 1.0 to 1.5 L daily for several months. During this time, the patient's weight decreased from 175 to 105 pounds, and his oncologist recommended radiation of the thoracic duct to treat the persistent chylous effusion. This treatment seemed extreme to the patient and his family who pursued oncology consults at academic hospitals. His new oncologist diagnosed that there were two distinct problems: a leak in his thoracic duct from enlarged lymph nodes in addition to CLL. In collaboration with an interventional radiologist, a treatment plan was formed with advice from leading experts to use glue embolization for the thoracic duct leak. The patient started receiving total parenteral nutrition. With MR lymphangiography, the leak was localized with contrast injected into the right and left inguinal lymph nodes. Titanium coils were inserted into the lymphatic duct for glue embolization of the thoracic duct. Glue embolization was successful at stopping the chylous effusion. The patient was discharged from the hospital for rehabilitation and soon returned home. The patient continues to do well and follows up regularly with his oncologist for his CLL, and there has been no return of the chylous effusion. His CLL was well controlled on Ibrutinib until it underwent a Richter transformation.

As persistent chylothorax can be a life-threatening condition due to loss of nutrients and lymphocytes, prompt treatment is necessary. While further research is needed to see the effectiveness of dynamic contrast enhanced magnetic resonance lymphangiography (DCMRL) and intranodal lymphangiography, this case reports the successful medical optimization and glue embolization of the chyle leak in a patient with chylothorax from CLL. It is important that clinicians know of this effective treatment option for this rare complication of CLL that has fewer side effects than radiation of the thoracic duct.

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FUNGAL INVASION OF THE CENTRAL NERVOUS SYSTEM BY TREATMENT-REFRACTORY ASPERGILLUS FUMIGATUS

Introduction: Aspergillus fumigatus is a ubiquitous fungal saprotroph found in environments throughout the world. Inhalation of airborne conidia occurs frequently, and germination of spores into pathogenic hyphae may cause various forms of aspergillosis. Immunocompetent patients rapidly clear the organism and rarely develop infection in the absence of pre-existing pulmonary pathology. Conversely, immunocompromised patients are at heightened risk for invasive or disseminated disease. Disseminated infection may result in invasion of the central nervous system with formation of brain abscesses and corresponding neurologic deficits, portending poor prognosis.

Case Presentation: A 60-year-old man with history of CLL on ibrutinib presented to Albany Medical Center in August 2019 for evaluation of altered mental status associated with persistent cough and dyspnea. On arrival, the patient was disoriented, unable to provide history or follow commands. Examination revealed diminished breath sounds at the left lung base, and CBC showed leukocytosis of 23,500/mm3 with neutrophilic predominance. Chest x-ray demonstrated patchy infiltrates and left-sided pleural effusion with chest CT findings concerning for lymphangitic spread of malignancy. Head CT demonstrated multiple necrotic lesions, concerning for metastatic disease, while follow-up MRI revealed ten rim-enhancing masses with surrounding edema involving the bilateral cerebral hemispheres.

The patient was admitted and underwent left lung biopsy, which revealed hyphal forms consistent with Aspergillus. The patient also underwent right frontal craniotomy with mass resection, which similarly showed acute necrotizing fungal encephalitis. He was initiated on treatment with micafungin and amphotericin B, and demonstrated marked neurological improvement. The patient was discharged on oral voriconazole, to which the fungus was determined to be susceptible at 0.25 ug/mL. The patient returned in December 2019 with complaints of headache, speech difficulty, and visual impairment. MRI revealed new occipital lesions with effacement of the left ventricle, and the patient underwent left occipital craniotomy with abscess evacuation, again demonstrating Aspergillus. Given failure of treatment with voriconazole, the patient was initiated on intravenous amphotericin B plus isavuconazonium sulfate, and again discharged home.

Twelve days later, the patient experienced recurrence of symptoms. Imaging revealed reaccumulation of the left occipital abscess, as well as a new left temporal abscess. Over the subsequent months, the patient underwent five additional neurosurgical procedures with recurrence of symptoms despite completion of various combinations of antifungal therapy, including instillation of intralesional amphotericin B. Fungal isolates from cerebral tissue collected in November 2020 remained sensitive to amphotericin B, micafungin, and voriconazole; at 0.12, 0.015, and 0.25 ug/mL respectively. The patient was transitioned to hospice care in December for failure to thrive, and passed on January 1, 2021.

Discussion: This case demonstrates the susceptibility of immunocompromised patients to disseminated aspergillosis and high mortality associated with central nervous system infection. Despite fungal susceptibility, poor penetration and underlying immunocompromise may limit treatment effectiveness.

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PER-TUBE BICTEGRAVIR & EMTRICITABINE-TENOFOVIR ALAFENAMIDE (B/F/TAF): A POTENTIAL ALTERNATIVE FOR MAINTENANCE OF VIROLOGIC SUPPRESSION IN HIV INFECTION

Introduction: B/F/TAF is a fixed-dose, single-pill combination regimen indicated for treatment of chronic infection with HIV-1. The tablet consists of the integrase strand transfer inhibitor, bictegravir; along with two NRTIs, emtricitabine and tenofovir alafenamide. It is typically administered whole with good oral bioavailability to provide complete therapy for treatment-naïve and virologically-suppressed patients. Scenarios in which patients are unable to tolerate oral therapy; for example, due to dysphagia or altered mental status; are not uncommon, and necessitate pursuit of alternative routes of administration.

Case Presentation: A 59-year-old African American man with HIV maintained on B/F/TAF presented to Albany Medical Center in April 2020 for evaluation of a several-month history of epigastric pain associated with 40-pound weight loss. MRCP revealed a heterogeneous mass in the pancreatic head with central necrosis, as well as diffuse dilatation of the pancreatic duct, concerning for malignancy. The patient underwent pancreaticoduodenectomy, during which biopsies of the pancreatic head and a palpable mass in the right hepatic lobe were positive for poorly-differentiated adenocarcinoma. In light of metastatic disease, the procedure was aborted in favor of palliative intervention. Viral load at this time was <40 copies/mL with CD4 count of 640 and CD4% of 33. During port placement in early June, the patient developed respiratory distress requiring intubation and was admitted to the SICU. An orogastric tube was placed, through which he received crushed B/F/TAF followed by routine feeds. Per-tube administration continued via PEG, which was placed on June 30. Viral load on July 10 was <40 copies/mL.

Case Presentation: A 68-year-old man with HIV-AIDS with long-term undetectable viremia on emtricitabine-tenofovir alafenamide and raltegravir presented to Albany Medical Center in March 2020 for evaluation of a one-month history of cough, dyspnea, and difficulty breathing with periods of decreased consciousness. In the emergency department, the patient exhibited worsening mental status, prompting emergent intubation. He was admitted to the MICU with acute hypoxic respiratory failure secondary to COVID pneumonia complicated by ARDS and septic shock. At this time, viral load was found to be <40 copies/mL with CD4 count of 360 and CD4% of 36. Following a prolonged ICU course, the patient developed worsening dysphagia, which necessitated PEG tube placement in May, through which he received crushed B/F/TAF. The tube was removed on June 16 and viral load remained undetectable shortly thereafter.

Discussion: While both dolutegravir and raltegravir have been demonstrated to maintain virologic suppression when crushed and delivered via tube, there are currently no controlled studies that formally evaluate the effectiveness of B/F/TAF when delivered similarly, compared to traditional oral administration. Here, we sought to further expand this growing body of literature with two cases in which per-tube administration of B/F/TAF was implemented with maintenance of virologic suppression.

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SUSTENANCE, SEPSIS, STONES, AND SEVERE COAGULOPATHY: A CASE REPORT ON ACQUIRED VITAMIN K DEFICIENCY

Vitamin K in adults is well-regulated through a process involving consumption, absorption, and conservation. Thus, a clinically significant acquired vitamin K deficiency is considered rare in healthy adults and typically found only in the setting of chronic malabsorption or medications that interfere with vitamin K metabolism. Patients with vitamin K deficiency present with bleeding due to the role of vitamin K as a cofactor in the coagulation cascade. We report a unique case of severe vitamin K deficiency attributable to multiple disruptions in the pathway.

A 65-year-old female with a history of diabetes, hypotension, diverticulitis, hemorrhoids, and end-stage renal disease on hemodialysis initially presented to the emergency department with altered mental status. Family reported a four-week history of diarrhea, two-week history of poor oral intake, and recent bleeding from multiple sites including the following: right arm fistula, gums, vagina, and rectum. On admission, she was found to be septic (WBC 21 × 10^9/L, temperature 101.7F). Labs showed PTT of 125s, PT of 63.7s, INR of 7.1, AST of 59 Units/L, and ALT of 55 Units/L. Head CT revealed a left sided subdural hematoma over the frontal lobe. She was given one dose of tranexamic acid, vitamin K, and three units of FFP which resulted in an INR correction to 1.1 and hematoma reduction. Mixing study results indicated inhibitors to factors II, V, and X. Sepsis workup focused on a gastrointestinal source of infection. Testing for stool C. difficile toxin, ova, and parasites all came back negative. Abdominal/Pelvic CT showed colitis with acute sigmoid diverticulitis and an extraluminal air-fluid collection consistent with a localized perforation and abscess near the urinary bladder. Patient was started on IV Vancomycin/Zosyn. Finally, CT angiography was notable for a 2.1 cm filling defect in the common bile duct. MRCP confirmed choledocholithiasis, and the stone was removed via ERCP.

Acquired vitamin K deficiency is typically a diagnosis of exclusion based on the clinical picture and INR reversal following vitamin K administration. Factors contributing to vitamin K deficiency in this patient include: inadequate consumption from poor oral intake, malabsorption from sepsis altering the gut microbiome, malabsorption from hepatobiliary disease disrupting bile salt delivery, and finally a four-week history of diarrhea exacerbating the patient's malabsorptive state. It is unusual for each condition alone to lead to a severe deficiency. This case highlights the potential severity of a vitamin K deficiency in a unique instance of coagulopathy caused by the collective effects of multiple disruptions in the vitamin K pathway. Proper identification and treatment of acquired vitamin K deficiency are critical especially when considering the potentially devastating effects of a severe deficiency.

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Post-COVID-19 Fatigue: A Case of Infectious Hypothyroidism

Introduction

Clinical hypothyroidism is present in roughly 4.6% of US adults. While many studies have shown the onset of subacute thyroiditis (SAT) after certain infections, including COVID-19, few studies have demonstrated the relationship between COVID-19 and overt hypothyroidism.

Case Presentation

A 49-year-old male with no significant past medical history was seen in the primary care clinic complaining of a six-month history of fatigue, unintentional 10 pound weight gain, constipation, dry skin, and myalgia. He denied personal or family history of hypothyroidism or any autoimmune disease. He denied any kind of medication use. He was diagnosed with COVID-19 in March 2020 and had an uncomplicated course and recovery. Physical exam was within normal limits, demonstrating no tenderness to palpation of the anterior neck and no palpably enlarged thyroid. Lab results were significant for elevated TSH of 74 and a detectable anti-thyroid peroxidase level of 626. TSH was repeated with similar elevation to 72. A SARS-CoV-2 antibody test was reactive and revealed elevated titers to 137.7. The patient was initiated on Synthroid 50 mcg daily and continues to follow up in the primary care clinic.

Discussion

This case illustrates one possible sequela of COVID-19 infection that has yet to be widely documented. Recent studies have suggested that certain factors predispose to higher incidence of thyroid dysfunction post-COVID-19 infection. By far, the most influential factor was being female. The proposed mechanism of thyroid dysfunction in COVID-19 infection is via ACE-2 receptors present in thyroid tissue. Once the virus has entered the thyroid via ACE- 2 receptors, a host immune mediated response is activated, including proinflammatory molecules, such as IL-6 that disrupts thyroid deiodinases and thyroid hormone transport proteins, as well as impairing TSH secretion from the pituitary gland. As many studies have shown, COVID-19, like many other acute infections, can cause SAT. However, SAT normally presents with tenderness to palpation of the anterior neck and symptoms of hyperthyroidism. Hallmark laboratory findings of SAT are elevated erythrocyte sedimentation rate (greater than 50â€‰mm/hr) and C-reactive protein (CRP), low TSH concentrations with high free T4 and T3 during the early stages of the illness, and there is also a normal or mildly elevated leukocyte count and mild anemia. Thus, overt hypothyroidism following infection with COVID-19 seems to be a rare, transient phenomenon that responds well to traditional treatments for hypothyroidism.

Conclusion

This case will inform clinicians of another complication linked to the SARS-CoV-2 virus and add to an increasing number of vast pathologies associated with post-COVID-19 infection.

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Cerebrospinal Fluid Ascites Complicated by Hydrothorax and Hydrocele in an Elderly Patient

Introduction: Sterile cerebrospinal fluid (CSF) ascites, hydrothorax, and hydrocele are rare complications of ventriculoperitoneal (VP) shunt for hydrocephalus and present challenges to diagnosis and management.

Case Presentation: An 89-year-old male with a history of gastrostomy tube placement for esophageal dysmotility, midline incisional hernia repair, bilateral inguinal hernia repair, and VP shunt placement for hydrocephalus presented with intractable abdominal bloating and scrotal swelling. Physical examination revealed a non-tender abdomen, positive fluid wave test, and large bilateral scrotal swelling without redness. CT and ultrasound revealed massive ascites, bilateral hydrocele, and a left pleural effusion. Paracentesis yielded 2.7 liters of clear yellow ascitic fluid with a total protein of 2.5 g/dL, albumin 1.5 g/dL, glucose 155 mg/dL, and serum-ascites albumin gradient of 1.3. No leukocytes or organisms were isolated from culture. Cytology was negative for malignancy. A doppler liver showed no evidence of portal or hepatic thrombosis. CT and ultrasound of the abdomen did not show any signs of liver cirrhosis or metastasis. An echocardiogram showed a left ventricular ejection fraction of 55% and grade 1 diastolic dysfunction. Urinalysis was negative for proteinuria, glucosuria, or hematuria. The patient's abdomen gradually reaccumulated fluid, and a repeat paracentesis was done 10 days later, drawing another 1.6 liters of similar clear yellow fluid. Looking through the patient's past CT reports, it was revealed that he first developed a small amount of ascites proximal to the tip of his VP shunt 2 years ago. This was shortly after his first abdominal surgery for gastrostomy placement. In light of the patient's multiple abdominal surgeries and the timing of ascites accumulation, CSF ascites due to peritoneal irritation was considered. Neurosurgery was consulted and a decision was made to reversibly ligate the shunt to verify the VP shunt as the ascites source. The patient's follow-up abdominal ultrasound, chest x-ray, and physical exam one month after discharge showed resolution of his abdominal ascites, pleural effusion, and scrotal swelling.

Discussion: We report the first known case of concurrent CSF ascites, hydrothorax, and hydrocele in an elderly patient. While most CSF Ascites occur in pediatric patients, suspicion for CSF ascites should be raised in elderly patients with a history of peritoneal irritation after ruling out other causes of ascites. Concurrent intractable pleural effusions and hydroceles are likely due to the flow of CSF from the peritoneum into the pleural space and scrotum. The risk of CSF hydrocele is elevated in patients with histories of inguinal hernias. Given the increased risk of surgical complications from VP shunt re-placement in elderly patients, VP shunt ligation for nonadjustable VP shunts could be used as a minimally invasive tool to confirm CSF Ascites.

New York Chapter
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Medical Student Research

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Patient Perspectives on Televideo in Upstate New York

Introduction: Due to its widespread human-to-human transmission and associated mortality rates across the world, the SARS-CoV-2 pandemic has impacted many aspects of the healthcare system, including delivery of care. With physical distancing orders in place, Albany Medical Center integrated telemedicine options for the outpatients it serves. With the sudden shift in patient-care structure, it was important to rapidly assess the effectiveness of this new virtual care system from the perspective of the patient. Additionally, this presented a unique opportunity to assess televideo across all medical specialties, which has not yet been published in peer-reviewed literature. In so doing, interventions could be introduced rapidly to enhance the patient care experience.

Objective: The aim of our study is to analyze the perception of care by patients who attended a televideo appointment with an outpatient clinician. We hypothesized that more than 50% of those patients would have a positive experience and would not be opposed to attending more televideo visits in the future.

Methods: We published a 13 question survey on the Qualtrics® platform that addressed the patient's perception of care after attending a televideo appointment with a clinician of the Albany Med Physician Group practice. We included patients >18 years of age and excluded patients seen by psychiatry and pediatrics. From July 7, 2020 to Nov 2, 2020, survey links were emailed to all eligible patients the day after their televideo appointment and data were analyzed by the authors.

Results: 677 patients were emailed a link to the Qualtrics® survey. 116 responses were collected (completion rate: 17.13%). The demographic breakdown of those who responded was as follows: 76 females (65.5%), 38 males (32.76%); 71 patients were age 65 years or older (61.2%); 62 (53.44%) reported having a travel time of 30 minutes or greater and 16 (13.79%) reported having a travel time greater than 2 hours. 107 patients (92.24%) reported that their primary medical concern was addressed, with 87 patients (75.0%) were â€œextremely satisfiedâ€ and 19 (16.38%) were â€œsomewhat satisfiedâ€ with the telemedicine care they received. 55% of an initial 31 responses reported technical difficulties, which was identified as an audio glitch with the portal app. This was brought to the attention of faulty leadership and the audio malfunction was addressed. After this intervention, 28% of patients responding reported continued technical difficulties, which included issues with connecting, poor audio, and poor video quality. 83 patients (71.55%) were â€œextremely likelyâ€ to utilize telemedicine again.

Conclusion: Our data show the perception of care by the patients was high even though many experienced technical difficulties. The study revealed that over 50% of patients rated their experience as â€œextremely satisfiedâ€ which supports the continued use of televideo as an outpatient appointment option.

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Seroprevalence of SARS-CoV-2 IgG in an Upstate New York Primary Care Outpatient Clinic

Introduction:

In December 2019, an outbreak of upper respiratory infections caused by SARS-CoV-2 (COVID-19) was first reported in China. The introduction of SARS-CoV-2 serology tests has allowed primary care physicians to evaluate for history of COVID-19 illness. Antibody tests look for evidence of antiviral immunoglobulins (Ig) developed following exposure and infection by SARS-CoV-2. The results from serological antibody testing can be utilized to indicate disease prevalence and frequency of asymptomatic infection, as well as to identify risk factors for exposure to SARS-CoV-2 within a population.

Methods:

A retrospective chart review of 92 patients who received SARS-CoV-2 IgG serology testing was conducted to obtain clinical and laboratory data for a single outpatient practice in the Capital District of New York State. Inclusion criteria were patients 18 years or older who received serological testing from May-July 2020. The Albany Medical Center Institutional Review Board reviewed and approved this protocol.

Chi square statistical analysis was used to identify which factors were most closely associated with a positive serology result for SARS-CoV-2. These variables included previous symptoms of COVID-like illness, work in a congregate living facility, travel, exposure to a known COVID patient, employed as a health care worker, other essential worker, and co-morbidities (hypertension, diabetes, COPD, heart disease, chronic kidney disease).

Results:

A total of 9 patients in the cohort tested positive for IgG antibody. Prevalence of a positive IgG serology test was 9.78%, compared to the state reported average of 3.4% across multiple upstate NY counties as of April 2020. The sample consisted of patients with the following descriptors: 72 White (79.3%), 2 Black (2.2%), 2 Asian (2.2%), 15 Unknown (16.3%); 23 Male (25%), 69 Female (75%). The most represented counties in the cohort are as follows: 55 Albany county (59.8%), 17 Saratoga (18.5%), 8 Rensselaer (8.7%), 8 Schenectady (8.7%). Mean age was 50.4 years and median age was 55 years. The only variable that was significantly associated with a positive COVID-19 antibody test result was employment as a non-healthcare essential worker (p value = 0.0234). In our study, there was a total of 22 healthcare workers (23.91%) and 10 non-healthcare essential workers (10.87%).

Conclusions: Our sample at an academic primary care site in the suburbs of Albany, NY showed greater community seroprevalence in comparison to the reported state data. Despite a small sample size, non-healthcare essential workers were more likely to have a positive antibody test, emphasizing the need for proper supply and use of personal protective equipment and safe work environments for the essential workers in the community. Further research is needed on how quickly these antibodies will wane, and whether patients would be susceptible again to COVID-19 infection in the future.

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DOES SUBSTANCE USE IN PATIENTS WITH PSORIASIS PREDICT SUBSEQUENT DEVELOPMENT OF MENTAL HEALTH DISORDERS?

BACKGROUND CONTEXT: Psoriasis is a chronic disease that may result in physical pain, psychological anguish, and social stigmatization. Epidemiologic studies have demonstrated a significantly greater burden of mental health disorders (MHDs) in patients with psoriasis compared to those without psoriasis. The association between MHD and substance abuse has been well-described, yet the influence of past or present substance abuse or dependence on the development of subsequent MHD in patients with psoriasis is undetermined.

OBJECTIVE: To determine whether substance abuse or dependence among patients with psoriasis increases the probability of subsequent new-onset development of a MHD.

METHODS: The NYS Statewide Planning and Research Cooperative System (SPARCS) was queried to identify all psoriasis patient with prior or current substance abuse or dependence (Psoriasis-SA: alcohol, tobacco, marijuana, amphetamine, opioid, or polysubstance) from 2009-11 for minimum 2-year follow-up until 2013. Patients with prior or current MHDs were excluded. The Psoriasis-SA cohort were propensity-score matched by age, sex, race, and Charlson/DEYO comorbidity index to psoriasis patients without substance abuse or dependence (Psoriasis-NoSA). Cohorts were compared for subsequent incidence of any or individual MHDs (depressive, anxiety, stress, sleep, and/or eating disorders). Multivariate binary stepwise logistic regressions were utilized to calculate odds ratios (OR) of developing any or individual MHDs based on previous substance abuse or dependence.

RESULTS: 4980 psoriasis patients were included (n=2490 in each cohort). Psoriasis-SA and Psoriasis-NoSA cohorts had comparable demographics including age (54.38 vs. 54.53 years), sex (67.2% vs. 67.3% male), race (70.0% vs. 72.4% white), insurance (31.8% vs. 33.2% Medicare), and Charlson/DEYO index (1.7779 vs. 1.8157) respectively. Psoriasis-SA patients exhibited a significantly increased rate of development of any subsequent MHDs (18.4% vs. 11.8%, $p<0.001$), including depressive disorders (9.8% vs. 4.9%, $p<0.001$), and anxiety disorders (5.0% vs. 2.7%, $p<0.001$) among the individual MHDs. Stress disorders (0.9% vs. 0.4%), sleep disorders (2.6% vs. 3.8%), and eating disorders (0.0% vs. 0.1%) did not meet the study criteria for significance ($p<0.01$). Baseline substance abuse or dependence independently predicted development of any MHD (OR=1.747, 95% CI, 1.486-2.054; $p<0.001$), depressive disorder (OR=2.192, 95% CI, 1.746-2.752; $p<0.001$), and anxiety disorder (OR=1.983, 95% CI, 1.462-2.691, $p<0.001$). Female sex also independently predicted development of any MHD (OR=1.328, 95% CI, 1.125-1.567; $p=0.001$), depressive disorder (OR=1.382, 95% CI, 1.105-1.728; $p=0.005$), and anxiety disorder (OR=1.588, 95% CI, 1.182-2.135; $p=0.002$).

CONCLUSIONS: Patients with psoriasis who had baseline substance abuse or dependence were at increased risk of developing any new MHD, specifically depressive and anxiety disorders, over a two-year period. Of note, female patients with psoriasis were also at increased risk of developing new MHD, specifically depressive and anxiety disorders. These results may encourage primary care physicians and dermatologists to screen for MHDs in patients with psoriasis who exhibit substance abuse or dependency.

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UNITED HEALTH SERVICES HOSPITALS PROGRAM

Managing delirium in COVID-19 using Atypical Antipsychotics

Introduction:

Emerging evidence has noted common neuropsychiatric complications of COVID-19 such as delirium, encephalopathy, olfactory disturbances, acute behavioral changes, headache, and cerebrovascular accidents. Typically, almost one-third of people who are critically ill will have an episode of delirium though for COVID-19, that proportion rises to more than half. We present a case of COVID-induced delirium that was treated with an atypical antipsychotic, quetiapine.

Case Presentation:

A 65 year old female who works at a long-term care facility presented to the ER with a change in mental status. She tested positive for COVID-19 approximately 2 weeks prior to presentation but had remained asymptomatic until she started to have mental status changes. Past medical history was significant for hypertension and peripheral neuropathy. Her home medications included gabapentin, hydrochlorothiazide, and metoprolol succinate.

On presentation, vital signs were normal. Initial physical exam including neurological exam was unremarkable. Initial labs were notable for hypokalemia of 2.8; otherwise, hemogram and metabolic panel were normal. Serum TSH and B12 were within normal limits. A non-contrast CT scan of the brain was negative for acute intracranial pathology. The patient was admitted for observation. In the subsequent days, she developed nocturnal restlessness, which progressed to frank agitation and combativeness. She failed to respond to conservative management with reorientation and close monitoring. She was started on oral quetiapine 25 mg nightly and IV haloperidol 2 mg as needed every 6 hours. This did not result in any improvement, prompting a consult to our psychiatry service. Her clinical symptoms were attributed to late neuropsychiatric manifestation of COVID as no other underlying etiology could be ascertained. Her medication regimen was revised to oral quetiapine 50 mg in the morning and afternoon, and 100 mg at bedtime. In addition, she was provided with oral quetiapine 50 mg as needed every 6 hours and IV haloperidol 2 mg as needed every 6 hours for agitation. The patient's agitation gradually subsided and she was safely discharged home.

Discussion:

Quetiapine is an antagonist at multiple neurotransmitter receptors including but not limited to serotonin 5-HT2A, dopamine D1 and D2, histamine H1 and H2, and adrenergic Î±1 and Î±2 receptors. Quetiapine's antagonism of 5-HT2A receptors might be relevant to COVID-19 psychosis/delirium given serotonin's role in modulating inflammation. There are various proposed mechanisms for COVID-induced delirium ranging from the direct effect of the virus invading neurons to increased permeability of inflammatory factors across the blood brain barrier. The antagonism of atypical antipsychotics at 5-HT2A receptors suggests that quetiapine may be preferred over a predominantly anti-dopaminergic (D2) drug such as haloperidol. The hypothetical role of serotonin in this process is an area of research that needs to be further examined.

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Mycobacterium haemophilum skin infection in heart transplant patient: A masquerader

Introduction

Mycobacterium haemophilum (MH) is a slowly growing acid-fast bacillus (AFB) belonging to the group of nontuberculous mycobacteria (NTM). It was first described and named in 1978. It has been reported to cause skin infections, arthritis, osteomyelitis, and pneumonitis. We describe a heart transplant patient who developed nodular skin lesions due to MH.

Case

A 71-year-old lady with a history of dilated cardiomyopathy leading to heart transplant (On cyclosporine and prednisone) presented with gradual development of painful nodules on legs and arms. On examination, the patient had slightly erythematous, tender, firm, and relatively immobile subcutaneous nodules involving bilateral legs and left forearm with no overlying ulceration. A punch biopsy was performed and sent for histology, special staining, and cultures. Dermatopathology demonstrated findings of fibrocytes and collagen suggestive of dermal scar. Special stains suggested AFB-positive organisms however no growth was seen on AFB culture. As species could not be identified, the patient had to undergo repeat punch biopsy of lesion with interval increase in size and number of skin nodules. Fresh tissue obtained was also sent for AFB polymerase chain reaction (PCR). AFB PCR confirmed M. Haemophilum and the patient was started on Azithromycin, Ciprofloxacin, and Rifabutin for 6 months. The patient had slow resolution of skin lesions after 3 months of antibiotic therapy and was on the antibiotic regimen at the time of submitting this abstract.

Discussion

M. haemophilum is found primarily in immunocompromised hosts like renal transplant recipients, AIDS patients, and patients with Hodgkin's disease. To the best of our knowledge, this is the 6th M. haemophilum infection ever reported in cardiac transplant patients. The smaller number of cases reported in cardiac transplant patients is likely since kidney transplants are approximately 8 times more common than heart transplants. Skin manifestations are the most frequently reported presentation, a circumstance that reflects the organism's propensity for growth in a cooler environment. Infections by M. Haemophilum can present with non-granulomatous lesions like in our case. Laboratory identification of M haemophilum needs special culture techniques and media and can be difficult in a setting in which these methods are not routinely used. There are no standard treatment guidelines available, but published literature agrees that immunocompromised patients should be treated with multiple antibiotics, tailored to the disease presentation and underlying degree of immune suppression.

Conclusion

With an increase in the number of transplantation surgeries, iatrogenic immunosuppression, and chemotherapy, the number of infections due to M. haemophilum is likely to increase. Failure to suspect mycobacterial infection in such settings contributes to probable underreporting, misdiagnosis, or delay in diagnosis and treatment. Our case emphasizes the importance of high suspicion for this infection in cardiac transplant recipients leading to timely diagnosis and prevention of disseminated infection.

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Electrocardiogram Findings and Mortality in COVID-19 Patients

Introduction: The outbreak of COVID-19 caused by severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) has quickly progressed to a global pandemic. SARS-Cov-2 may cause myocardial injury and inflammation, thereby increasing the risk of developing arrhythmias. These arrhythmias, whether directly caused by the viral effect on the myocardium or not, might be a contributing factor to the high mortality rate seen in patients with COVID-19.

Objective: The purpose of this study was to find out what electrocardiogram abnormalities are most observed in COVID-19. In addition, we evaluated whether COVID-19 patients with electrocardiogram abnormalities have a higher mortality rate compared to COVID-19 patients without arrhythmia.

Methods: In this inpatient retrospective cohort study at the Richmond University Medical Center, we reviewed more than 800 charts from March to July 2020. After applying the inclusion and exclusion criteria, 342 patients were included only. All medical records were analytically evaluated to obtain demographic characteristics, laboratory tests and medical comorbidities. The inclusion criteria were male and female patients with COVID-19, ages greater than 18 years, and those with an initial electrocardiogram on the day of admission. We excluded patients with history of lung disease, previous coronary or structural heart diseases, arrhythmia, pacemakers or automated implantable cardioverter defibrillators, thyroid diseases and patients who were taking medications that may cause electrocardiogram changes.

Results: Among the 342 patients, 177 patients had normal sinus rhythm and 165 patients had abnormal electrocardiogram findings. Of those 165 patients, 42 had sinus tachycardia. Using the Chi square with a p-value of less than 0.05, there was evidence to reject the null hypothesis. This indicated that there was an association between abnormal electrocardiograms and mortality in patients with COVID-19 (chi square = 45.9753; of p-value < 0.00001). Sinus tachycardia had the highest mortality rate of 73.80%. However, the mortality rates among those with arrhythmias and normal sinus rhythm were 22.77% and 30.15%, respectively. The most common arrhythmias were atrial fibrillation, premature atrial complexes, and premature ventricular complexes.

Conclusion: Sinus tachycardia was the most observed abnormal electrocardiogram finding in COVID-19 patients as well as with the highest mortality rate. We can theorize that this abnormal finding is linked, at least in some patients, with undiagnosed heart diseases, and less to electrolytes abnormalities, multi-organ failure, and other comorbidities not included in exclusion criteria. Further studies are necessary to find out the correlation of the documented findings and direct cardiac damage caused by the virus.

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Hyperprogression in NSCLC Lung Cancer: Good or Bad?

Introduction:

Hyperprogression is a novel term describing accelerated progression of tumor burden and has been associated with the use of immune checkpoint inhibitors in various types of cancers (Champiat, Dercle et al. 2017). Patients who develop hyperprogression seem to have worse outcomes (Kim, Choi et al. 2020). Here we present a case of hyperprogression with good response to subsequent therapy.

Case presentation:

A 61-year-old, female, with a 35-year smoking history was diagnosed (biopsy) with non-small cell lung adenocarcinoma, stage IIIA (T4N0M0). Due to the central location and proximity to pulmonary artery, and marginal FEV1, surgical intervention was not offered. Per NCCN guidelines she completed definitive concurrent chemoradiation as weekly carboplatin-paclitaxel with radiotherapy in Nov/2017. She then received 2 cycles of consolidation full dose carboplatin-paclitaxel and was completed on 2/8/2018. Her subsequent CT chest showed interval decrease in the primary tumor. Per NCCN guidelines the patient then received 1 dose durvalumab on March 1st/2018, but later developed symptoms of headache, fatigue, SOB and cough. Follow-up PET showed hyperactivity in the left adrenal gland that was not previously present. MRI of the brain showed new metastatic disease. Biopsy of the left adrenal mass 4/2/2018 showed metastatic adenocarcinoma of lung origin. The patient was thought to have hyperprogressive disease (Khreis, Azar et al. 2019). She then received 10 fractions of whole brain radiation which was completed on 5/16/2018. Therapy was changed according to NCCN guidelines to carboplatin-pemetrexed, was given for 4 cycles. This was followed by 4 cycles of maintenance pemetrexed completed in Nov/2018. Additionally, she underwent palliative radiotherapy to the left adrenal metastasis as she was not a surgical candidate. Follow-up PET scan displayed resolution of left adrenal uptake up a new right lower lobe nodule. The patient subsequently received 5 fractions of palliative radiotherapy to the pulmonary nodule completed on January 2019. Since then, follow-up PET scans and MRIs of the brain showed no metastatic disease or disease recurrence and the patient is still in remission.

Discussion:

With the recognition of new outcomes after the use of immunotherapy, literature has shown poor prognosis with hyperprogression (Kim, Choi et al. 2020). However, our patient showed excellent response with subsequent combination standard therapy and has not received therapy for over 14 months. Further studies are needed to establish reasons for such favorable response.

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NSTEMI in a 28- Year-Old: Paradoxical Coronary Artery Thrombus precipitated by Cyclic Vomiting Syndrome

Introduction:

Coronary artery thrombus is a well-known cause of myocardial infarction with non-obstructed coronaries (MINOCA). A prothrombotic state is the most common non-cardiac cause of a coronary artery thrombus. Here we present a unique case of a 28-year-old with MINOCA secondary to a paradoxical left anterior descending artery (LAD) thrombus precipitated by cyclic vomiting syndrome.

Case:

A 28-year-old female with past medical history of chronic pain syndrome, cyclic vomiting syndrome, tobacco use disorder and oral contraceptive pill (OCP) use presented with complains of nausea, vomiting, diarrhea and epigastric pain. EKG was significant for non-sustained ventricular tachycardia. Echocardiogram revealed apical hypokinesis, troponins peaked at 1.56 ng/mL (0.05 ng/mL) which prompted a cardiac catheterization. Patient was found to have a large proximal left anterior descending artery thrombus, however there was no evidence of coronary artery disease. She underwent mechanical thrombectomy with partial resolution of the thrombus. A two-dimensional transesophageal echocardiogram (TEE) revealed a patent foramen ovale (PFO) as a potential source of the thrombus and she subsequently underwent PFO closure. She was counselled on smoking cessation and OCP use to decrease her clotting risk. She was initiated on aspirin, ticagrelor, metoprolol and lisinopril prior to discharge.

Discussion:

Paradoxical thrombus through a PFO exacerbated by repeated vomiting episodes is a rarely reported cause of MINOCA. Cyclic vomiting syndrome presents with prolonged and repeated episodes of vomiting and nausea. Vomiting, similar to Valsalva maneuvers, increases intrathoracic and right atrial pressures. A thrombus originating from the venous vasculature would traverse into the systemic circulation through an intracardiac shunt when right atrial pressure exceeds left atrial pressure. Hypercoagulable risk factors such as smoking and OCP use contribute to thrombus formation. Predisposing hypercoagulable factors in conjunction with repeated vomiting episodes may be a risk factor for coronary artery thrombus in younger patients. Consequently, a paradoxical thrombus should be considered in a younger patient presenting with MINOCA. Coronary artery thrombus is a well-established cause of sudden cardiac death and therefore early thrombus detection, acute management of coronary syndrome and subsequent PFO closure is of paramount importance to decreasing mortality and preventing further cardiac sequelae.

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Ectoparsitosis, a rare cause of iron deficiency anemia

Ectoparasitosis, a rare of of iron deficiency anemia

Introduction

Pediculus remains a public health concern in even the twenty-first century in the United States. Generally infestation presents as pruritis in children and has a benign course. But there have been a handful of cases reported in literature describing severe iron deficiency anemia in high risk populations.

Case Presentation

A 32 year old man with a history of schizophrenia presented to the emergency department with disorganized behavior in the street. He was undomiciled and known to the Elmhurst hospital system. He appeared unkempt with poor hygiene which served as a host to innumerable head and body louse which were visible on patient body and clothing. Physical exam was also noted for excoriations from scratching. He was alert to self only with tangential(thoughts), and didn't complain of any distress by the lice. History was negative for any GI complaints, fever, hematochezia, hematuria or melena. Initial labs revealed a hemoglobin of 6.3 g/dL as compared to a hemoglobin of 10.0 g/dL on previous ED visit and eosinophilia of 15.6 % . Further labs for anemia workup included iron of 12 ug/ mL, ferritin of 25 ng/dL and normal haptoglobin. Hemoglobin electrophoresis was normal with HbA of 97.9%. During hospitalization the patient required permethrin for lice eradication and was educated regarding the role of proper hygiene in preventing recurrence. He was transfused three units of PRBC appropriate response, and improvement of Hb to 9g/dL. GI team was consulted for evaluation of iron deficiency anemia and he was recommended an outpatient endoscopy and colonoscopy but the patient was lost to follow up.

Discussion

Although incidence of lice infestation is higher in developing countries, this case highlights the unusual presentation of lice infestations as a cause of iron deficiency anemia in a city hospital of New York. Severe infestations can cause blood loss of 20ml per month which can be clinically significant in states of malnutrition and coexisting causes of anemia. It is important to consider especially in children, homeless, severe psychiatric conditions including depression presenting with unexplained iron deficiency anemia. For diagnosis common causes of iron deficiency anemia are first ruled out. Lab work ordered in the reported cases included iron, ferritin, folate, B12, peripheral smear, coagulation profile, LDH, hemoglobin electrophoresis and fecal occult blood. Eosinophilia was evident in three of six patients presenting in a case series published in JEM. Among pediculicides used in the USA 0.5% ovide was found to be most effective.

Conclusion

This case is presented to increase awareness of a rare cause of severe anemia from an ectoparasite affecting at risk population, even in developed countries. With the use of pediculicide and hygiene maintenance the infestation can be easily eradicated.

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Diabetic Ketoalkalosis

Diabetic ketoacidosis (DKA) typically presents with acidaemia. However, atypical presentations with alkalemia have been reported in patients with intractable vomiting, diuretics, or hyperaldosteronism. Cannabis use, however, adds another dimension to diabetic ketoalkalosis which has not been previously reported. Here we present a case of diabetic ketoalkalosis due to cyclic vomiting syndrome from cannabinoid use and hyperventilation.

A 34-year-old male smoker, non-drinker with Type 1 diabetes mellitus, cyclic vomiting from chronic cannabinoid use and recurrent admissions for DKA in the past presented to the emergency department (ED) with a one-day history of epigastric pain associated with nausea and persistent, non-bloody, vomiting. Patient endorsed he was in good health a day prior and was allegedly compliant with his insulin. Initial examination only showed epigastric tenderness. Initial workup showed severe hyperglycemia, elevated anion gap of 18 with a low bicarbonate of 21, and ketonuria on urine dipstick. However, blood gas analysis showed primary respiratory alkalosis with secondary metabolic alkalosis (PH/Pco2/Po2/HCO3-: 7.63/16mmhg/119mmhg/17). DKA resolved with standard management and cyclic vomiting controlled with as needed chlorpromazine. Acid-base status normalized and the patient was discharged home.

The case shows an unusual presentation of DKA presenting with overt alkalemia due to hydrogen ion loss from cyclic vomiting from chronic cannabis use, coupled with volume contraction and hyperventilation. Although there is volume contraction in DKA, it is typically not severe enough to cause alkalosis. This contradicts the traditional framework of acidosis in DKA, thus clinicians should be aware that DKA can occur with alkalosis especially if the alkalotic process exceeds the acid generating process of DKA. With more states legalizing cannabis use in the United States, we can expect more cases of alkalotic DKA due to cyclic vomiting from cannabinoid use.

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Rare case of C-3 dominant Post-Infectious Glomerulonephritis and leukoclastic vasculitis in a patient with Infective endocarditis

Diagnosis of infective endocarditis (IE) with immune mediated complications can be challenging. Moreover, there is no consensus on the treatment of IE related glomerulonephritis or leukoclastic vasculitis. Here we present a rare case of IE complicated with an unusual form of post-infectious glomerulonephritis and leukoclastic vasculitis.

A 61-year-old female with a past medical history of heroin misuse, IE, and hepatitis C presented with 5-day duration of fever, chills, and general malaise, as well as progressive shortness of breath of indefinite duration.

On physical examination, she was febrile, hypotensive, and heart rate was 92bpm. She had a 3/6 holosystolic murmur audible at the left sternal border. There were track marks and small hyperpigmented papules on both arms but no Janeway lesions, Osler nodes, or splinter hemorrhages. Initial workup showed leukocytosis with left shift. Chest CT with IV contrast revealed multiple nodules, cavitation, as well as patchy areas of consolidation in lungs bilaterally. Transthoracic Echocardiogram revealed an enlarged right ventricle and severe tricuspid regurgitation with no evidence of vegetations. Blood cultures on admission and on the 3rd day of hospitalization grew Methicillin Sensitive Staphylococcus Aureus (MSSA).

Patient was started on Vancomycin and Piperacillin-tazobactam for IE which was narrowed to Oxacillin on day 3 On hospital day 14 she developed confluent, non-tender, erythematous, itchy plaques which were initially thought to be Oxacillin induced. Oxacillin was therefore switched to Daptomycin. Coinciding with the development of the skin lesions was an increase in creatine with nephrotic range proteinuria and a Fractional Excretion of sodium (FENa) of 0.9. Skin biopsy showed focal vascular deposition of C3 without immunoglobulins suggestive of leukoclastic vasculitis. Similarly, kidney biopsy showed C3 glomerulopathy with focal mesangial and endocapillary hypercellularity consistent with endocarditis-associated glomerulonephritis. Additional workup showed positive Rheumatoid factor, elevated C-Reactive Peptide, low serum C3 and C4 levels, elevated IgA and IgG levels, and normal IgM levels. Antinuclear antibody, Anti-myeloperoxidase antibody, and anti-proteinase-3 antibodies were negative. Hence, the diagnosis of Oxacillin induced vasculitis and mixed cryoglobulinemia were ruled out. Steroids were added to ongoing therapy leading to improvement in both renal function and clinical symptoms.

This case report adds to the body of knowledge on IE as simultaneous occurrence of a C3 glomerulopathy and C3 restricted skin vasculitis as sequelae of IE to the best of our knowledge has not been previously documented. Optimum management for IE with immunologic sequelae is not well defined. Antibiotics and steroids as in this case may be used to treat IE with immunologic sequelae.

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UNINSURED AND HUNGRY: THE IMPORTANCE OF ADDRESSING THESE CHALLENGES IN A PATIENT WITH DIABETES

Social determinants of health (SDH) are increasingly recognized for their importance in driving health outcomes. Food insecurity is associated with higher incidence of chronic disease including poorly controlled diabetes, yet it is often overlooked during routine office visits.

A 37-year-old female with history of gestational diabetes presented to clinic at a federally qualified health center with complaints of fatigue and weakness for a month. She had six pregnancies and six living children. The patient had not seen a physician since the birth of her youngest child six months ago as she had lost access to health insurance. She was not currently taking medications but had been taking metformin during pregnancy.

The patient endorsed sleep deprivation and frequently meal-skipping as she was overwhelmed by being the primary caretaker for her children. In addition to weakness and fatigue, she also complained of polyuria and polydipsia. She denied dysuria, abdominal pain, depressive symptoms, shortness of breath, bleeding, or dizziness. The physical exam revealed stable vital signs and no significant abnormalities. A rapid in-office HbA1c was 11.7% with a confirmatory serum sample of 12.7% and a random glucose of 320. The plan was to start insulin with follow up in one week.

Upon discussing the plan with the patient, the resident physician performed an SDH screen. The patient disclosed that her husband was unemployed and was having difficulties finding a job due to their undocumented immigration status. This situation caused frequent worry that they would run out of food for their children. As a result of the stress and decreased intake, she was struggling to produce enough milk to feed her baby.

Given the long periods of fasting due to food insecurity, as well as cost barriers, initiation of insulin was deferred. The patient was given information regarding emergency food pantry access as well as contact information for the Women Infant and Children program using an online social resource hub. A cost-effective approach to treatment was initiated through a 340 B pharmacy program for metformin 500 mg daily.

Six months later the patient returned. She reported using food pantries, had enrolled in insurance, and was taking her medication twice daily with good tolerance. She lost weight intentionally (15lbs) by changing her diet and, most importantly, felt like she had a consistent food supply. Repeat HbA1c was 5.1% and metformin was discontinued.

This case highlights the necessity of identifying and addressing social barriers to care as an essential and intervenable adjunct to diabetic treatment plans. Recognizing these barriers as contributors to poor disease control can prevent delays in care, reduce harmful outcomes, and improve trust.

Resident/Fellow Clinical Vignette

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Itching to be Treated for Disseminated Mycobacterium Avium Complex

Introduction:

In patients with poorly controlled human immunodeficiency virus (HIV) infections, seemingly common chief complaints may be the presenting symptoms of a severe underlying infectious process. While fungal opportunistic infections (OI) such as pneumocystis or candidiasis are more frequently seen within our practice, it remains important to consider viral and bacterial opportunistic infections of lower prevalence as well. We describe an atypical presentation of a less common OI, disseminated Mycobacterium Avium Complex (MAC) with hepatic involvement resulting in pruritus, elevated bilirubin, and transaminitis.

Case Presentation:

A 47-year-old HIV positive male with unknown viral load and CD4 count previously on anti-retroviral therapy (ARV) presented to the emergency room with worsening pruritus for four days. The patient reported being diagnosed with HIV seven months prior and had been on ARV therapy up until two weeks earlier. Labs were significant for a total protein of 8.4, albumin of 2.3, total bilirubin of 4, direct bilirubin of 3, alkaline phosphatase of 210, AST 239, ALT 250 and lipase of >1500. CT scan of the abdomen revealed no imaging suggestive of pancreatitis. Given history and significant laboratory derangements, gastroenterology and HIV teams were consulted. Once found to have a CD4 count of 14 cells/mm3 and viral load of < 30, the patient was started on Bactrim for prophylaxis. Collateral from an outside hospital revealed the patient had been diagnosed with disseminated MAC by bone marrow biopsy, thus the patient was started on ethambutol, azithromycin, and ciprofloxacin. MRCP revealed no evidence of gallstones, intrahepatic or extrahepatic biliary dilation, therefore GI recommended a liver biopsy to assess for disseminated MAC versus drug-induced liver injury. Liver biopsy revealed the presence of non-necrotizing granulomas, consistent with MAC. Patient clinically improved and was discharged for treatment with the HIV clinic as an out-patient where he was planned to resume ARV treatment weeks later to avoid Immune Reconstitution Inflammatory Syndrome (IRIS).

Discussion:

Diagnosing the cause of an otherwise common chief complaint is significantly complicated by immune system compromise. This is especially true in cases with severe reductions in CD4 count to <50 cells/mm3 and the absence of chemoprophylaxis against common OIs. It is crucial to not overlook such diagnoses as starting a patient on ARV therapy with disseminated infections like MAC can predispose patients to complications like IRIS. In our case, the patient presented with pruritus and was found to have hyperbilirubinemia and transaminitis that was ultimately due to a disseminated MAC infection rather than a typical biliary pathology.

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An Odd Case of Prosthetic Valve-Sparing Native Valve Endocarditis

Introduction:

The development of prosthetic valve endocarditis (PVE) is a concern in patients with previous valve replacement surgery who present with the stigmata of sepsis. Native valve endocarditis (NVE) among this population is almost always associated with a concurrent PVE. We report an unusual case of NVE with sparing of the bioprosthetic aortic valve.

Case Report:

58-year-old diabetic man presented with fever, anorexia, and cough for 11 days. His medical history was significant for porcine aortic valve replacement for aortic regurgitation, coronary artery disease status post coronary artery bypass graft, and Hodgkin's lymphoma treated with radiation. He was initially treated for influenza A in the outpatient setting without any improvement. During the inpatient encounter, he was febrile at 101.2°F, tachycardic, and had a new 2/6 grade systolic cardiac murmur. Leukocytosis with transaminitis was seen on bloodwork and a repeat influenza swab was negative. A chest radiograph showed old granulomatous disease in the mediastinum and right upper lung fields. Electrocardiogram showed normal sinus rhythm with bifascicular block. The differential diagnosis included postviral bacterial pneumonia, an occult malignancy, or endocarditis. He was started on broad-spectrum antibiotics. Transthoracic echocardiogram revealed large mitral valve vegetation with mild mitral regurgitation and a normal functioning bioprosthetic aortic valve. Blood cultures grew penicillin-sensitive Streptococcus anginosus. A valvular ring abscess was also seen on the anterior mitral valve leaflet measuring 1.9 cm when a transesophageal echocardiogram was performed. There was no evidence of vegetations on the bioprosthetic aortic valve, but there was suspicion for abscess in the aortic annulus. The patient was transferred to a tertiary center for cardiothoracic surgery and underwent removal of the valve vegetation and replacement of the mitral valve with tissue valve. Intraoperative findings showed an unaffected aortic valve without evidence of any abscess or vegetations. The patient tolerated the procedure well and was continued on penicillin postoperatively.

Discussion:

Streptococus anginosus is a member of the streptococcus milleri group (SMG). It is associated with cancers, including colon and hematologic malignancies. While S. anginosus can cause pyogenic abscess, it is a rare cause of endocarditis. In our patient, we believe the history of lymphoma and mediastinal radiotherapy put him at increased risk for NVE. There is limited data on selective infection of the native valve with sparing of the prosthetic valve, and the reason for this phenomenon is uncertain. In this case, timely imaging steered the clinicians away from their anchoring bias of presumed PVE and led to the early identification of NVE and prompt surgical intervention, which prevented further complications and mortality.

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USE OF DOACS, WHEN COMPARED WITH VITAMIN K ANTAGONISTS, IS ASSOCIATED WITH A SIGNIFICANTLY HIGHER RISK OF THROMBOEMBOLIC EVENTS IN VERY ELDERLY PATIENTS WITH ATRIAL FIBRILLATION WHO UNDERGO TAVR

OBJECTIVES: To assess the efficacy and safety of direct oral anticoagulants (DOACs) versus vitamin K antagonists (VKA) in very elderly patients with atrial fibrillation (AF) undergoing transcatheter aortic valve replacement (TAVR) on 2 efficacy outcomes: all-cause mortality and thromboembolic events (defined as stroke and/or transient ischemic attack and/or systemic embolism and/or valve thromboses) and one safety outcome: life-threatening or major bleeding events.

BACKGROUND: There is discrepancy in the results between different studies, previous meta-analyses and the current guidelines on the most appropriate way to manage patients with AF with CHA2DS2Vasc score 2 or more undergoing TAVR

METHODS: A systematic review of Medline, Cochrane, and Embase was done to find all studies in which the previously described outcomes of AF patients undergoing TAVR were compared according to their use of DOACs vs VKA.

RESULTS: Six studies with a total 3631 participants (male: 30.3%, mean ages were 82.8ï,±1.1 years and 82.2ï,±1.5 years for the DOAC and the VKA groups, respectively) were included in our analysis. No significant differences were found between the DOAC and VKA group in all-cause mortality (Risk Ratio [RR] 1.06, 95% Confidence Interval [CI] 0.84-1.35) or life-threatening or major bleeding events (RR 1.02, 95% CI 0.83-1.25). A significant increase in risk of thromboembolic events in the DOAC group (RR 1.23, 95% CI 1.05-1.44)

CONCLUSIONS: VKA should be preferred over DOACs in AF very elderly patients who undergo TAVR, given the significantly increased risk in thromboembolic events seen with DOACs and the lack of significant difference in all-cause mortality and bleeding.

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AMIODARONE-INDUCED LUNG TOXICITY PRESENTING WITH ORGANIZING PNEUMONIA IN LESS THAN 2 MONTHS OF LOW-DOSE AMIODARONE USE

Introduction: Organizing pneumonia (OP) is characterized by a histological pattern comprising of granulation tissue polyps within alveolar ducts, alveoli and with chronic inflammation involving the adjacent lung parenchyma. Etiology of OP varies widely from cryptogenic to secondary causes; including infections, rheumatologic/connective tissue diseases, radiotherapy, organ transplantation, gastrointestinal disorders, environmental exposures, and drug use. We report a case of low-dose amiodarone-induced OP in an elderly male.

Case Presentation: A 76-year-old male, 40-pack-year previous smoker with a history of atrial fibrillation (on Amiodarone 200 mg/day for six weeks) who presented with a 3-day history of shortness of breath, cough and fatigue. Examination was notable for platypnea, SpO2 of 92% on room air and low-grade fever. Labs showed mild leukocytosis (WBC of 11.1 x103/µL), BNP, D-dimer and procalcitonin levels were normal, and COVID-19 PCR was negative. Chest x-ray revealed diffuse bilateral hazy opacities and CT chest showed extensive ground-glass opacities with superimposed interlobular septal thickening (crazy pavement pattern) in bilateral upper lungs. The patient was admitted and commenced on Ceftriaxone and Azithromycin. Over the next 48 hours, he developed worsening hypoxia necessitating ICU care. Amiodarone and antibiotics were discontinued. He was placed on high-flow oxygen and started on IV methylprednisolone 1g daily. Sputum culture grew normal flora and investigations for Legionella, Mycoplasma, ANA, Proteinase 3, Myeloperoxidase, Rheumatoid factor, Tuberculosis, as well as a respiratory viral panel came back negative.

On day 9, the patient underwent video-assisted thoracoscopic surgery with lung biopsy for definitive diagnosis. Subsequent surgical pathology was consistent with acute lung injury with underlying chronic interstitial fibrosis and intermittent patterns of organizing pneumonia. Patient's respiratory status improved on the high-dose steroid therapy and he was weaned off oxygen as tolerated. On Day 15, he was discharged on a 6â€“12-week prednisone taper with outpatient follow-up.

Discussion: OP is rarely considered during the initial presentation of patients with pneumonia. Over 35 medications are known to cause secondary OP; hence, a thorough medication review and an accurate medical history must be obtained. Amiodarone-induced lung toxicity can complicate up to 17% of cases of amiodarone use, about a quarter of which manifest as OP. There is a dose-response relationship in amiodarone-induced OP; the cumulative dose over time is more important than the daily dose. OP is reported to occur even with low amiodarone doses of 200 mg/day but usually with â‰¥2 years of use. A few reports in literature have implicated amiodarone-induced OP after 3 months of use, but not earlier. Our patient had used 200 mg of amiodarone daily for just 6 weeks, making this an unusual presentation. Up to 80% of patients with OP could achieve good outcomes if diagnosed early and appropriate treatment given; hence, a high index of suspicion is necessary.

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Quality Improvement In Biochemical Testing For Suspected Acute Pancreatitis At A Metropolitan Hospital Center

Introduction:

Acute pancreatitis has traditionally been diagnosed by any combination of abdominal pain, abdominal imaging, and biochemical marker elevation. Historically, amylase was the preferred biochemical marker however it has been supplanted by lipase due to its superior sensitivity. The current consensus opinion from the American Society for Clinical Pathology recommends against testing both biomarkers for suspected acute pancreatitis, as this approach increases costs and complicates care without providing improvement in diagnostic efficiency. Furthermore, trending lipase is not indicated, as it does not alter clinical decision making. In our study, we sought to assess the choice and pattern of biochemical marker testing in patients admitted to Lenox Hill Hospital with suspected acute pancreatitis.

Method:

We conducted a retrospective chart review of patients admitted with acute pancreatitis from September 2018 to September 2020. Patients admitted for palliative services, under age 18, and those who received a full treatment course within the emergency department were excluded from the review. 102 patients were found to meet inclusion criteria. We assessed which biochemical marker testing was performed, under which service patients were admitted, and whether serum lipase was repeated within 48 hours of initial testing.

Results:

102 patients were found to meet inclusion criteria, 26 of whom were admitted to the surgical service and 72 of whom were admitted to medicine. Of those admitted to surgery, 10 received amylase testing, and 20 received repeat lipase testing, representing 38.5 and 76.9 percent of patients respectively. Of those admitted to medicine, 3 received amylase testing and 12 received repeat lipase testing, representing 4.0 and 15.5 percent of patients, respectively. Data were compared using a chi square and were found to be statistically different with a p-value < 0.01.

Discussion:

Determination of serum lipase, in conjunction with imaging and physical exam, are the cornerstone of diagnosis in patients with suspected acute pancreatitis. The use of amylase has been supplanted by lipase due to its higher sensitivity, and co-testing is not indicated. Furthermore, trending lipase provides limited clinical information. In our study, we found significant disparities in pancreatitis biochemical testing between the medical and surgical service and found inappropriate testing among both services. Some limitations to this study include its retrospective nature and the small sample size of acute pancreatitis patients included on the surgical service.

While this unnecessary testing in the diagnosis of acute pancreatitis may seem trivial, it represents a significant increase in medical costs, may subject the patient to unnecessary blood draws, and may lead to inappropriate patient care on the basis of persistently elevated biomarkers. To improve upon this metric, we plan to work with the pathology department to determine the appropriateness of biomarker testing at time of ordering through the electronic medical record system.

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DIAGNOSTIC PITFALLS IN A CASE OF CATASTROPHIC ANTIPHOSPHOLIPID SYNDROME

Introduction:

Catastrophic antiphospholipid syndrome (CAPS) is a serious complication of antiphospholipid syndrome (APS) associated with a mortality rate higher than 40%. When CAPS is the initial manifestation of APS, it often poses a diagnostic challenge and delays the timely implementation of life-saving treatment.

Case Presentation:

A 75-year-old male smoker was admitted to our hospital for three-week history of diffuse postprandial abdominal pain and non-bloody diarrhea. His medical history includes cerebrovascular accident and coronary artery disease. Physical examination showed diffusely tender abdomen. Laboratory findings were notable for AST: 1511 U/L and ALT: 984 U/L. A computed tomography angiography (CTA) showed significant atherosclerotic disease involving the celiac and superior mesenteric arteries without major arterial occlusion or mesenteric ischemia. His abdominal pain resolved in the ensuing five days as did the elevated transaminases. On the 6th hospital day, his platelet count dropped to 27,000/Î¼L from 137,000/Î¼L on admission. Additional evaluation revealed Cardiolipin IgM: 81.4 U/ml (reference range <20 U/ml) and Beta2-glycoprotein IgM: 72.9 U/ml (<20 U/ml). These clinical and laboratory findings prompted a reevaluation of previously acquired CTA which indeed revealed multiple splenic infarcts. The patient was collectively diagnosed with APS evolving into CAPS, and treatment with heparin infusion and methylprednisolone 1 gram once daily were started on the 7th hospital day. Although urgent plasmapheresis was recommended, a vascular catheter was not placed in a timely fashion.

On the 8th hospital day, the patient developed hypotension, hypothermia, hypoxemia, ischemia of right foot, and severe lactic acidosis. A bed side laparotomy showed extensive ischemic bowel. The patient's family elected comfort care, and the patient deceased on the 9th hospital day.

Discussion:

There were multiple factors that led to the delay of diagnosis in our case. First, there was no clear radiographic evidence of mesenteric ischemia upon initial presentation. The concurrent atherosclerotic disease further confounded the assessment for postprandial abdominal pain as a manifestation of APS. However, if the CTA were rereviewed earlier in light of the down-trending platelet count, it would have rendered earlier recognition of splenic infarcts. The concurrent development of visceral organ infarcts and thrombocytopenia helped identify the high titer of antiphospholipid antibodies. Since these findings yielded a very high pretest probability of APS presenting with mesenteric ischemia, the negative CTA did not discard the diagnosis despite its 93.3% sensitivity in identifying mesenteric ischemia. The rheumatology consultants recommended the combination of anticoagulation, high dose steroid, and plasmapheresis as it is associated with 77.8% of survival rate as per the CAPS registry.

Conclusion:

This case exemplifies a clinical pearl that the pretest probability of suspected diagnosis informs how clinical, laboratory, and radiographic findings should be interpreted and incorporated into the diagnostic reasoning.

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Escitalopram as a Cause of Worsening Tremors in a Patient with Parkinson's Disease

Case presentation:

A 72-year-old female with a past medical history of Parkinson's disease (PD), depression, intermittent asthma, insomnia, and osteoporosis, presents to primary care clinic with complaints of worsening depression secondary to the COVID-19 pandemic. Two weeks prior, she presented with similar symptoms to her neurologist and she was started on escitalopram 10 mg once daily. Given worsening symptoms of depression, escitalopram was increased to 15 mg once daily.

At 3 weeks follow up, the patient noted worsening tremors in her bilateral lower extremities causing unstable gait, insomnia and dysphagia to solids and liquids. Physical exam was notable for a resting tremor of her right foot that resolved with activity, mild tremor of the left foot and left hand, and cogwheel rigidity at right and left elbows. Her medication list included: escitalopram 15mg daily, carbidopa-levodopa 36.23 mg-145mg four times daily, and rasagiline 0.5 mg once daily. Lab testing showed normal CBC, CMP, B12, TSH, serum and protein electrophoresis. Given her worsening tremor, it was recommended that the patient taper off escitalopram over 2 weeks and follow up with her neurologist. Following this visit, neurology added a daily rotigotine 4 mg patch to her treatment regimen. After stopping escitalopram and adding the rotigotine patch, the patient reported her new tremors resolved but that she was very anxious, depressed, and crying more. Her primary care provider attempted to restart escitalopram 10 mg once daily, thinking that the initial tremors were due to poorly controlled PD. After one dose of escitalopram, patient reporting worsening tremors; therefore, she was told to stop medication and again her symptoms resolved. After input from Neurology, her primary care team decided to start Mirtazepine 7.5 mg at bedtime which resulted in improved mood symptoms without additional tremors.

Discussion:

Selective serotonin reuptake inhibitors (SSRIs) can be useful in treating anxiety and depression in patients with PD; however, side effects contributing to worsening motor symptoms must be taken into consideration. There are a few case reports linking escitalopram (in addition to other SSRIs) to worsening PD motor symptoms, the etiology of which may be related to serotonergic inhibition of the dopaminergic pathway. There are several meta-analyses documenting the efficacy of SSRIs, serotonin-norepinephrine reuptake inhibitor (SNRIs), tricyclic antidepressants (TCAs), and monoamine oxidase inhibitors (MAOs); however, there is evidence that the SSRIs sertraline and paroxetine and the SNRIs venlafaxine and mirtazapine may be associated with less risk of motor side effects in patients with PD. Therefore, if PD patients are unable to tolerate previous antidepressant therapy due to motor side effects, these medications may be an appropriate alternative option.

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A Ring in Disguise: Signet-Ring Cell Carcinoma of the Colon Masquerading as an Abdominal Wall Abscess

Introduction:

Colorectal Signet Ring Cell Carcinoma (SRCC) is a rare subtype of colorectal carcinoma (CRC), accounting for only 0.1% to 2.6% of all CRC cases. Symptoms develop late and it is usually diagnosed at an advanced stage. We report an unusual case of colonic SRCC presenting as an abdominal wall abscess.â€¯â€¯â€¯

Case Report:

Aâ€¯70-year-oldâ€¯female with no known medical illness presented to the emergency department with aâ€¯one-monthâ€¯history of worsening right lower quadrant pain. The pain was associated with weight loss, low-grade fever, early satiety, decreased appetite and chronic constipation. Physical exam was significant for a tender, palpable mass, 8-10cm in size, in the right lower quadrant of the abdomen. Abdominal computed tomography scan showed multiloculated abscess formations in different areas of the abdominopelvic wall and right retroperitoneal region, with concern for a superimposed necrotic neoplasm in the left adnexal/sigmoid region. Hypodense hepatic lesions were also noted, concerning for metastatic foci. Pigtail catheter drainage with culture of the accessible abscess was done. Broad-spectrum intravenous antibiotics were narrowed to amoxicillin/clavulanic acid with the growth ofâ€¯Streptococcusâ€¯anginosusâ€¯andâ€¯Bacteroidesâ€¯spp. from the culture studies.â€¯Interventional radiology (IR) guided biopsy of the left adnexal lesion, revealed a metastatic carcinoma with signet ring cell features. It had positive immunoreactivity for CK7, CA19.9, CK19, weak immunoreaction for CDX2 and few cells positive for CK20. Further work-up to determine the primary source was performed. Upper endoscopy showed a gastric ulcer due to chronic gastritis but no neoplasm. Colonoscopy, however, revealed a mass in the cecum. Biopsy samples of the cecal mass confirmed the signet ring cell carcinoma identical to those identified in the left adnexal lesion. Upon improvement of her clinical status, she was discharged with referral for outpatient cancer treatment.

Discussion:

SRCC, an already rare and aggressive tumor, typically arises from the stomach. This case demonstrates the occurrence of this tumor in a less common location, the cecum. Thus, while a metastatic site identified the tumor subtype, additional investigations should include other less frequent sites to find the primary source of the tumor. The case also highlights an unusual initial presentation of CRC as an abdominal wall abscess. This presentation is rare occurring only in 0.3 - 4% of cases.â€¯Nevertheless, an underlying malignancy must be considered among the differential diagnosis, especially with the patient’s associated systemic symptoms and age.â€¯

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Nothing but NET: A Curious Case of Massive Lower GI Bleeding from a Multifocal Neuroendocrine Tumor

Introduction:

Small intestinal neuroendocrine tumors (NET) are extremely rare causes of lower gastrointestinal (LGI) bleeding. We present a case of a multifocal NET of the small bowel presenting with massive LGI bleed. His hospital course was further complicated by COVID-19â€¯during the pandemic's early days.â€¯â€¯

Case report:

A 58-year-old African American male with type 2 diabetes mellitus, hypertension, hyperlipidemia, gastroesophageal reflux, and psoriasis presented to theâ€¯EDâ€¯with 3 episodes of hematochezia, right upper quadrant pain and a 4-day history of fever. On arrival, he was hypotensive, with low oxygen saturation and low-grade fever. Heâ€¯was placed on precautionary COVID-19 isolation as he had a history of exposure.â€¯Labs showed anemia, azotemiaâ€¯and leukocytosis. He was given multiple blood transfusions as the bleeding persisted. Due to COVID-19 procedural restrictions, a medical review board had to approveâ€¯endoscopic procedures. Esophagogastroduodenoscopy and colonoscopy, however, only showed chronic gastritis and colonic diverticulosis.â€¯Nuclear bleeding scan also failed to determine the site of bleeding. A decision was made to proceed with capsule endoscopy. This study showed multiple mass-like lesions in the small bowel,â€¯some with active bleeding. To further evaluate these lesions, CT or MRâ€¯enterography was preferred, but due to COVID-19 restrictions, a small bowel series was performed instead. This showed filling defectsâ€¯in the jejunoileal region. On the 12th hospital day, his COVID-19 test came back positive. Subsequently, with improvement in respiratory status and after mandatory isolation, he was eventually cleared to undergo a small bowel resection. Histopathology confirmedâ€¯the presence of a well-differentiated neuroendocrine tumor, grade I, with positive synaptophysin and chromogranin and muscularis propria and lymphovascular invasion. Oncology was consulted and further outpatient management was scheduled.â€¯

Discussion:

Gastrointestinal Neuroendocrine Tumors (GI-NETs) are slow-growing tumors with distinct histological, biological, and clinical characteristics that have increased in incidence and prevalence within the last few decades. The incidence is about 3.56 per 100,000 population. These tumors contain chromogranin A, synaptophysin and neuron-specific enolase which are necessary for making a diagnosis. In addition, a NET is the most common small intestinal malignancy. More than two-thirds of these tumors arise in the terminal ileum, within 60 cm of the ileocecal valve. In symptomatic patients, abdominal pain is the most common initial symptom, and this may be due to complications such as intussusception, tumor bulk or mesenteric ischemia. Though rare, these can then lead to LGI bleeding, as observed in our patient. Further complicating things was the presence of COVID-19. There was a lot of uncertainty surrounding the viral illness at that time. The delay in determining the root cause of his massive LGI bleeding was largely due to the restrictions put in place because of COVID-19. This case simultaneously highlights the difficulty that was faced in tackling various concomitant medical issues at the time of the pandemic.

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A Rare Presentation of Amyopathic Dermatomyositis Associated with Esophagitis

Dermatomyositis is an idiopathic inflammatory myopathy consisting of immune-mediated proximal skeletal muscle weakness with a characteristic heliotropic rash and gottron's papules. In more rare cases, amyopathic dermatomyositis occurs with cutaneous findings of dermatomyositis without inflammatory muscle disease. We present a case of persistent skin rash without muscle weakness with subsequent systemic symptoms requiring extensive workup for malignancy.

A 38-year-old female presented to the dermatologist for a new rash of three months. The rash consisted of erythematous macules and patches over the forehead, periocular region, and bilateral cheeks, with subsequent spread to the anterior chest, neck and upper back. Additional diffuse excoriating follicular papules were present on the lower legs bilaterally. Physical exam was negative for lymphadenopathy and edema. Past medical history was negative for atopic dermatitis, urticaria, angioedema, and anaphylaxis. Medications included cetirizine, famotidine, and omeprazole. Family history included breast cancer in the maternal grandmother. Review of systems was positive for post nasal drip and cough.

In office skin prick allergy testing was negative for food and environmental allergens. Skin patch testing was negative to the NAC North American 80 Comprehensive series. Skin punch biopsy of the right upper back was performed with histology revealing subtle interface and spongiotic dermatitis with a basket-weave stratum corneum with orthokeratosis and mononuclear inflammatory dermal infiltrate. Histological differential diagnosis included spongiotic drug eruption, contact dermatitis, or atypical pityriasis rosea.

Laboratory testing was notable for a basic metabolic panel, liver function tests, and complete blood count within normal limits. Serum immunoglobulins, complements, erythrocyte sedimentation rate, tryptase, and anti-nuclear antibody panel (ANA, anti-SSB, anti-centromere, anti-Jo-1, anti-chromatin, anti-Scl-70, anti-Smith, anti-RNP, anti-ds-DNA, and anti-SS-A) were within normal limits.

The patient was started on a prednisone taper with 60% improvement in redness and itching. She subsequently developed new dysphagia and underwent endoscopic evaluation showing reflux esophagitis, esophageal dysmotility, and gastritis. On further workup, the patient had nailfold capillary changes with increased tortuosity and ragged cuticles. Repeat skin biopsy showed increased mucin deposition in the dermis and focal areas of basement membrane thickening. The combination of her clinical presentation along with mucin deposition and basement membrane thickening made dermatomyositis the leading diagnosis. Malignancy workup was initiated including CT scan of chest, abdomen and pelvis. She was additionally referred to pulmonology for workup of interstitial lung disease and diaphragmatic weakness as well as gynecology for pap smear and pelvic ultrasound. She was started on prednisone 60 mg daily and monthly intravenous immunoglobulin (IVIG). Methotrexate treatment was discussed with the patient but deferred due to concerns related to the Covid-19 pandemic.

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A rare presentation of lung adenocarcinoma with simultaneous pulmonary embolism and cardiac tamponade

Introduction:

Acute pulmonary embolism (PE) and pericardial effusion are common presentations in intrathoracic malignancies, but their presence simultaneously is extremely rare and results in a therapeutic dilemma. We introduce a patient presented with both fatal conditions and highlight the therapeutic challenge of managing both condition at the same time.

Case presentation:

A 73-year old male patient initially presented to another facility with shortness of breath. He has significant history of smoking. On examination he was tachypneic and tachycardic. Cardiac examination revealed distant heart sounds and elevated jugular venous pulses. Electrocardiogram showed atrial fibrillation with ventricular rate of 140 per minutes. His initial labs were significant for metabolic acidosis with pH 7 and HCO3 14, anion gap of 23, and lactic acid 11.49, creatinine of 1.2, liver enzymes 30 times the upper limit, and INR of 3.6. CT scan with angiography of the chest acute bilateral segmental pulmonary emboli, and 3.4cm large pericardial effusion. Bedside echocardiography revealed large pericardial effusion and right ventricular diastolic collapse suggestive of tamponade physiology. The patient was given a therapeutic dose of low molecular weight heparin and was transferred to our facility.

Upon arrival to our critical care unit, the patient became unresponsive and hypotensive and was intubated emergently. Bedside pericardiocentesis drained 1000mL of bloody fluid. His blood pressure did not improve and continued to be in circulatory shock. His family decided on comfort measures and he passed within 12 hours from arrival to our unit.

Discussion:

Intrathoracic malignancies can present in different ways. Both PE and pericardial effusions with tamponade are fatal complications of such malignancies, and their synchronous presence is extremely rare. It is very challenging to identify the predominant etiology causing the hemodynamic instability, and it is even more challenging to manage them both simultaneously.

PE if severe enough can cause outflow obstruction to the right ventricle (RV), which lead to an obstructive shock. On the other hand, a hemorrhagic pericardial effusion producing a tamponade will stunt the RV filling causing cardiogenic shock as well. Physiologically, both conditions if present concurrently should counteract their effects on the RV and maintain an adequate RV filling and pressure. Treatment of PE with anticoagulation cannot be safely done in the presence of hemorrhagic pericardial effusion, however our patient did received anticoagulation which probably had worsened the effusion and introduced the cardiac tamponade.

Learning points:

-Intrathoracic malignancies can present in various ways, including PE and pericardial effusion

-concurrent PE and pericardial effusions are extremely rare and usually fatal.

-the risk and benefit of anticoagulation for PE in the presence of hemorrhagic effusion should be carefully weighed and need communication between multiple specialties teams.

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HEMI CHOREA AND HEMI BALLISMUS: A RARE PRESENTATION OF SEVERE NON KETOTIC HYPERGYCEMIA- A CASE REPORT

Background: Hemi chorea and hemiballismus are rare presentations of severe chronic persistent hyperglycemia and resolve with correction of hyperglycemia in most cases.

Clinical case; We report a case of a 67 year-old woman with history of chronic uncontrolled diabetes mellitus, hypertension, and hyperlipidemia, presenting with dance-like movements of the left arm and mouth deviation of few hours duration. The patient had been treated with oral agents for her diabetes and was switched to basal prandial insulin two weeks prior to presentation. At arrival to ED, the stroke code was called. Vital signs were unremarkable, her fingerstick blood glucose was 633mg/dl. On physical exam, the patient was awake and alert, with mild left facial weakness and obvious abnormal left hand movements, with otherwise normal neurological exam. A CT head and MRI brain were performed. MRI showed the typical decreased T2/flair signal within the right frontal lobe, white matter, right caudate head, and bilateral lenticular nucleus with mild increased T1 signal of the right caudate and lenticular nucleus compatible with hyperglycemic nonketotic hemichorea hemiballismus. Her significant lab values were blood glucose of 306mg/dl, and HbA1c of 18.7%, with absence of ketonuria or acidosis. The patient had significant decrease in her abnormal hand movements with improvement of her blood sugar control on insulin therapy. However, she required additional medications to improve the chorea, including tetrabenazine and risperidone. Eventually, her symptoms significantly improved on this regimen over the two months following discharge.

Hemiballismus is a rare movement disorder usually due to cerebrovascular accident but associated in several case reports to hyperglycemia. While the exact etiology is unclear, the hyperintensity usually seen on head CT scan and the pathognomonic T1 hyperintensity of the basal ganglia on MRI is postulated to be related to metabolic abnormalities caused by hyper viscosity of the blood in the end arteries supplying the basal ganglia. Several case reports associated movement disorders to chronic persistent hyperglycemia but there are many other cases that described hemiballismus in acute cases of hyperglycemia or persisting hyperglycemia despite adequate glycemic correction. Most of the patients described had an underlying markedly elevated HbA1c as a common factor which suggests that a prolonged period of uncontrolled hyperglycemia or multiple shorter periods may be necessary to produce Hemiballismus.

We aim to enhance awareness of this rare association and to promote recognizing hemiballismus as one of the varying presentations of severe hyperglycemia in order to ensure early diagnosis and therapy.

Conclusion: This case illustrates the rare association of hemiballismus with severe chronic hyperglycemia that warrants recognition in literature.

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A DIFFERENT TYPE OF RASH: ADULT ONSET STILL'S DISEASE IN AN AFRICAN AMERICAN FEMALE

Adult-Onset Still's Disease (AOSD) is a rare multisystem inflammatory process with unknown etiology. Worldwide yearly incidence is estimated at 1.6 new cases per 1 million. Diagnosis remains elusive and exclusionary due to lack of confirmatory laboratory tests and nonspecific inflammatory changes; however, patients typically present with a non-pruritic salmon colored rash corresponding with fevers and inflammatory arthritis.

A 61-year-old African American female with no past medical history presented for two weeks of weakness, fever, nonpruritic dark macular rash on chest and head, and polyarthritis. She was febrile on admission to 38.7c with a neutrophilic predominant leukocytosis of 14.8 K/uL. Labs were notable for an ESR of 126 mm/hr, CRP 212.0 mg/L, and ferritin of 3643.9 ng/mL. Rheumatoid factor, anti-DSDNA, and ANA were negative. Urinalysis and culture were negative for infection. Chest x-ray showed a mild right lower lobe atelectasis versus pneumonia. She was empirically treated for pneumonia without resolution of her symptoms or inflammatory markers. Blood cultures drawn prior to antibiotic treatment showed no growth after 150 hours.

The patient's fevers, leukocytosis, elevated inflammatory markers, and inflammatory arthritis were consistent with Adult-Onset Still's Disease per Yamaguchi Criteria; however, her rash did not fit the classic macular salmon colored appearance and instead presented as dark brown. She was started on prednisone and colchicine with improvement of her fever, rash, polyarthritis and decrease in inflammatory markers seen on serial follow-up after discharge.

While Adult-Onset Still's Disease is an elusive diagnosis, it may be even more difficult to identify due to disparities in dermatologic resources and literature on darker skin tones. The original Yamaguchi criteria was established following a study of 90 individuals of Japanese descent. Research indicates that rashes can present vastly different based on skin tone. Further research needs to be conducted to expand the medical literature and incorporate a wider array of skin tones to allow for better diagnosis and treatment of rashes.

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Bronxcare Health system

Digital Gangrene and Ulnar Artery Occlusion in a Construction Worker with a Smoking History

Background: Thromboangiitis obliterans and repetitive trauma can cause digital gangrene.

Objective: To describe a case of digital gangrene and ulnar artery occlusion in a middle-aged construction worker with a heavy smoking history

Case Report:

A 53-year-old man with a 40-year history of smoking 10-15 cigarettes a day presented to the emergency department with pain, paresthesia, and necrosis at multiple fingertips of both hands. Finger pain had been present for 4 months and worsened in cold weather. He denied similar complaints over the toes. He had no history of dyslipidemia, diabetes mellitus, or hypertension. He did not take any regular medication. He had immigrated to the United States from Mexico. He lived alone in New York and worked in construction. He did not drink alcohol or use illicit drugs. There was no family history of rheumatologic or cardiovascular disease. Upon presentation, his blood pressure was 145/78mmHg, and his body temperature was 98.2°F. Clinical examination revealed cold fingers with dry gangrenous changes over his middle and index fingertips. Radial pulses were palpable bilaterally. Lower limb examination was unremarkable. Laboratory findings showed the following: white blood cell count 10,500/uL, hemoglobin 15.1 g/dL, platelets 288 x 103/uL, and serum creatinine 0.5 mg/dL. His erythrocyte sedimentation rate was 27 mm/hr but C-reactive protein was 8.63 (reference range, <5mg/L). Computed tomography angiography revealed absence of the distal ulnar artery in both upper extremities and an occlusion of his left ulnar artery. This was further assessed using ultrasound, which showed very small ulnar arteries at the wrists. Doppler signal was absent at the left ulnar artery, suggestive of thrombosis. Consulting surgeons felt that revascularization was not feasible. The patient was started on a heparin infusion. A transthoracic echocardiogram showed an ejection fraction of 61%. Tests for rheumatoid factor, antinuclear antibody, antineutrophil cytoplasmic antibodies, and antiphospholipid antibodies returned negative. Anticoagulation was discontinued. With the clinical diagnosis of thromboangiitis obliterans, he was advised to stop smoking and was treated with amlodipine 5mg daily. His finger pain improved. At the 3-week follow-up, the patient still had pain but no evidence of infection. Then he was lost to follow-up.

Discussion:

Thromboangiitis obliterans typically occurs before the age of 45 years and after smoking. However, repetitive trauma such as an occupational exposure can also lead to ulnar artery occlusion in the general population who are middle-aged or elderly. In most cases, ulcers do not involve both upper and lower extremities. The diagnosis does not require a biopsy but treatment can include calcium channel blockers to reduce vasospasm. Most importantly, smoking cessation can stop progression of the disease, which can be complicated by autoamputation.

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Mixed Autoimmune Hemolytic Anemia â€“ Are We Getting Warmer or Colder in Finding Further Treatments?

Introduction

Mixed autoimmune hemolytic anemia (M-AIHA) is a documented but rare presentation that can be a therapeutic challenge due to a paucity of research into treatment compared to the Warm and Cold phenotypes.

Case Presentation

An 86-year-old woman presenting to the Emergency Department with several weeks' duration of fatigue and weakness. Past medical history is notable for dementia and hepatosplenomegaly of uncertain etiology for the past 4 years. Labs on admission notable for normocytic anemia of 5.6 g/dL and hematocrit 20% with no obvious sources of bleeding. She was admitted and given two units of packed red blood cells. Workup revealed mixed warm and cold autoimmune hemolytic anemia (M-AIHA) with 2+ IgG and 3+ C3d on direct antiglobulin testing with lab confirmation of agglutination of RBCs at both 37°C and 4°C. She was initially started on oral Prednisone 1mg/kg but transitioned to IV Solumedrol due to delirium with poor oral intake. A transfusion threshold of hematocrit < 21% was set and patient initially responded well but quickly had an increased transfusion burden so weekly Rituximab was added after 6 days of prednisone. CT of the chest, abdomen, and pelvis revealed multiple new nodular opacities bilaterally with sub-carinal lymph node enlargement of 1.3 cm thought to be reactive versus neoplastic. The patient continued to require regular blood transfusions despite 2 weeks of Rituximab and 3 weeks of steroid therapy and after a multidisciplinary team meeting with the patient's family it was decided to transition her home on comfort care measures instead of pursuing further intervention.

Discussion

Research has shown prevalence of M-AIHA to be 8-15% among primary AIHA cases but there is scarce data on its management, with case reports demonstrating inconsistency in presentation and response to steroids as first line therapy. Rituximab is now a common second line agent with promising results, with still unresponsive patients either referred for splenectomy or managed with 3rd line immunosuppressive agents such as azathioprine, cyclophosphamide, interferon-alpha, and Mycophenolate Mofetil for warm AIHA. There are fewer options in cold AIHA, although Sutimlimab is promising with potential for FDA approval. Unfortunately it is unclear whether any of these treatments can be extrapolated to M-AIHA. In cases of underlying lymphoma, AIHA can resolve after treatment, but in up to 50% of patients the cause is idiopathic. In our patient, lung nodules with lymphadenopathy were found pointing to lymphoma vs solid tissue malignancy, but she was a poor candidate for further interventions.

Conclusion

M-AIHA is rare, and therapy intuitively involves combining treatments for the warm and cold variations, though data for efficacy in the mixed variant is sparse. This case highlights the need for further research to understand the best treatment of mixed AIHA.

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A rare case of Haemophilus influenzae aortic valve endocarditis

A rare case of Haemophilus influenzae aortic valve endocarditis

INTRODUCTION

Haemophilus influenzae are gram negative coccobacilli that commonly colonize the respiratory tract, with H.influenzae serotype B (Hib) considered a highly virulent variant. While vaccination has greatly reduced the prevalence of Hib, nontypeable strains have been implicated in invasive infections of the elderly. Endocarditis secondary to H. influenzae, is an exceedingly rare entity and accounts for <2%. Here we present the case of a 71-year-old woman with H. influenzae bacteremia and native aortic valve endocarditis.

CASE

A 71-year-old woman with a medical history of sciatica and chronic sinusitis presented to the emergency department by her outpatient provider for irregular heart rate. She noted a two-week history of lower abdominal pain, diarrhea, subjective fevers, and chills. Initially, she was found to be in atrial fibrillation with rapid ventricular response and was admitted to the cardiac telemetry unit. There, she was treated with diltiazem and anticoagulation. Hospital course was complicated by H. influenzae (biotype I, serotype unavailable) bacteremia and initiated on ceftriaxone. The patient did not report any sinus tenderness or respiratory complaints, and all imaging (chest x-ray, CT sinuses and CT abdomen/pelvis) were unremarkable. Due to complaints of multiple joint pain and swelling, arthrocentesis of the left knee and right hip were performed and were consistent with pseudogout and negative for any bacterial growth. However, the arthrocentesis was performed after five days of intravenous antibiotics. TTE did not reveal any vegetations. Gallium scan showed areas of increased uptake in all areas of joint pain, more suggestive of polyarticular pseudogout rather than hematogenous spreading of septic arthritis. The patient's joint pain improved with colchicine, however her surveillance blood cultures (hospital day 2) continued to grow H. influenzae. TEE revealed a mobile fibrinous echogenicity measuring 0.88cm x 0.2cm on the noncoronary cusp of the aortic valve. Cardiothoracic surgery was consulted for consideration of valve replacement, however given the sub-centimeter vegetations noted, surgery was deferred. Surveillance cultures (hospital day 3) demonstrated no further growth. Fortunately, the patient clinically improved and was discharged to subacute rehab with a PICC line to complete six weeks of intravenous Ceftriaxone.

DISCUSSION

Although H. influenzae is classically responsible for sinopulmonary infections including otitis media, pneumonia, or sinusitis, rarely it can cause invasive infection leading to meningitis, septic arthritis, and endocarditis. Haemophilus species are part of the HACEK organisms which only account for 1-3% of infective endocarditis. Our case illustrates a patient with native aortic valve endocarditis and bacteremia and highlights clinical features, diagnosis, and management caused by nontypeable Haemophilus influenzae. A learning point from this case is the importance of having a high index of suspicion for rare and unusual organisms causing endocarditis given persistent bacteremia of unclear source.

Resident/Fellow Clinical Vignette

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Patient on Chronic PPI use came to the Hospital with Seizure

Introduction:

Proton pump inhibitors (PPIs) are widely-used acid suppressants. Chronic PPI use has been associated with several adverse outcomes including C. difficile colitis, pneumonia, vitamin and mineral malabsorption, kidney disease, and lupus. We present a case of generalized tonic-clonic seizures and SVT due to severe hypomagnesemia from chronic PPI use.

Case presentation:

A 75-year-old woman with a history of GERD on esomeprazole presented after a minute of generalized tonic-clonic seizure. EMS found her in postictal phase and, en route to the hospital, she had another episode of seizure that was associated with SVT (HR of 250 bpm) and BP was 89/53 mmHg. Midazolam 5 mg IM was given resulting in cessation of seizure. Synchronized cardioversion with 100 joules was performed with improvement in BP to 144/62 mmHg and HR to 113 bpm. On arrival, the patient was unresponsive, hypoxemic (oxygen saturation of 87%) and temperature of 97.8 F. The patient was emergently intubated for airway protection, sedated with propofol, and given levetiracetam 1 gm IV for seizures. Labs were notable for magnesium of 0.4 mg/dl, potassium of 5 mmol/L, calcium of 7.4 mg/dl, lactic acid of 2.4 mmol/L, WBC count of 24.9x10(3)/mcl and procalcitonin of 0.31 ng/ml. Urinalysis showed WBC of 51-100/HPF. EEG and non-contrast CT head were unremarkable. Generalized seizure and SVT were suspected to be due to severe hypomagnesemia secondary to chronic esomeprazole use and complicated UTI. The patient was given IV magnesium sulfate and calcium gluconate and was empirically started on IV vancomycin, aztreonam, and metronidazole for complicated UTI. Esomeprazole was discontinued and famotidine 20 mg was initiated. Hypomagnesemia, hypocalcemia, leukocytosis and the cardiac arrhythmia resolved. The patient was extubated on day 3. The urine culture grew VRE and antibiotics were changed to linezolid. No further antiepileptic drugs were given. She was discharged after 9 days of hospitalization to complete 7-day course of linezolid.

Discussion:

Magnesium plays a critical role in metabolic reaction as a cofactor and stabilizes several enzymes. Hypomagnesemia, defined as < 1.8 mg/dl, generally caused by inadequate intake, malabsorption, gastrointestinal or renal loss. Chronic PPI use can decrease the absorption of magnesium by increasing the luminal pH of enterocytes.

Symptoms of hypomagnesemia, notably generalized weakness, nausea, vomiting, muscle cramps commonly occur when magnesium level is <1.2 mg/dl; however, severe hypomagnesemia (< 1 mg/dl) may lead to cardiac arrhythmia, confusion, coma, and seizure. The exact mechanism of hypomagnesemia causing seizure is still under investigation; however, animal models have shown that hypomagnesemia increases seizure activity likely via effect on several excitatory neurotransmitters.

Inappropriate chronic PPI use should be avoided by improving knowledge and awareness among healthcare professionals to minimize its detrimental health hazards.

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Chasing the Dragon and Stumbling Upon the Octopus: A Case of Heroin-Induced Leukoencephalopathy and Reverse Takotsubo Cardiomyopathy

Introduction: '"Chasing the Dragon" is a practice referring to heating up heroin and inhaling its vapors. We present a case on Heroin-Induced Leukoencephalopathy (HIL) that demonstrates its broad neurological effects and possible contribution to reverse Takotsubo cardiomyopathy (rTTC).

Case: A 37-year old female with a history of inhalation of heroin vapers presented with two weeks of progressively worsening weakness in all extremities, blurry vision, and slowed speech. The patient required the assistance of her mother to perform all activities of daily living, including urination, defecation, sanitation, ambulation, and nourishment. Patient's initial neurological exam was remarkable for noted restlessness, decreased visual acuity, slowed movements on coordination testing, delayed response time, and slurred speech.

Two weeks after initial presentation the patient demonstrated extensor posturing of the upper extremities, dysautonomia, inconsolable crying and rigidity. She was started on a course of antibiotics, dantrolene and high dose antioxidants (Coenzyme Q10, Vitamin C and Vitamin E). Minimal improvement in symptomatology was noted. The patient became mute, areflexic, started experiencing central fevers and muscle cramps. She was briefly intubated for concerns for aspiration. She was eventually extubated and received a PEG tube given overall poor neurological prognosis.

Lumbar puncture studies, pancultures, heavy metal toxicity screening, CTA and MRI of the spine were unremarkable. MRI of the head demonstrated extensive, symmetric T2 hyperintense signaling in the white matter of the cerebellum, brainstem, cerebral hemispheres, and some aspects of the frontal lobes. EEG showed disorganization, diffuse slowing, and sharp waves with triphasic morphology without evidence of epileptiform activity. TTE demonstrated basal ventricular ballooning, indicating reverse Takotsubo cardiomyopathy.

The patient eventually demonstrated minimal improvement in speech and was clinically stable without fevers or symptomatic tachycardia. She was discharged to a skilled nursing facility.

Discussion: The initial stage of HIL is primarily cerebellar, typically including pseudobulbar speech, motor restlessness, and cerebellar ataxia. The intermediate stage, occurring 2-4 weeks after onset, includes worsening of cerebellar symptoms, extrapyramidal symptoms (myoclonus and chorea), and pyramidal tract signs (hyperreflexia and spastic paresis). The terminal stage often includes akinetic mutism, central fevers, areflexia, muscle spasms and is often associated with eventual death. Our patient progressed through all the distinct clinical stages. The EEG and MRI findings in our patient are pathognomonic and unique to HIL.

Our patient was found to have reverse Takotsubo cardiomyopathy, a condition associated with young age and neurological disease. We believe the autonomic instability and frontal lobe involvement contributed to the development of rTTC.

Treatment for HIL is still unknown, but studies have shown that antioxidants may aid the resolution of clinical and radiological findings. Increased white matter lactate and response to antioxidants indicate HIL may be related to a mitochondrial dysfunction causing demyelination and oligodendrocyte apoptosis.

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New-Onset Rheumatoid Arthritis Following COVID-19 Infection

Rheumatoid arthritis is an immune-mediated disease involving interactions between genetic and environmental factors [1, 2]. It has been considered that a pre-clinical RA phase comprising the generation of autoantibodies in genetically susceptible individuals lasts months to years then transitions to a clinical RA event by virtue of other driving factors [2]. During the pandemic, a number of considerations regarding the interaction of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) with rheumatic diseases have arisen [3-6]. Aggressive inflammatory responses observed in the severe cases of COVID-19 seem to be linked to a dysregulation of host innate immunity [7, 8]. Barrier damage, T cell activation, effector cytokine production, and neutrophil influx are also key features of synovitis, and some of the mediators are shared between COVID-19 and RA [9]. These facts led us to believe that infection with COVID-19 could play a role in exacerbating joint inflammation in patients with subclinical or early-stage RA [10], prompting patients to seek medical attention. Here, we describe a case of Seropositive rheumatoid arthritis that occurred following SARS-CoV-2 infection, suggesting the potential for SARS-CoV-2 to act as an activator of clinical rheumatoid arthritis.

61-year-old Caucasian female with unremarkable PMH was referred to rheumatology clinic for evaluation of positive anti-CCP Ab and negative IgG RF but positive IgM and IgA RF. She presented with symmetric polyarthritis in both feet and hands associated with morning stiffness that gets better after she moves around. She denies joint swelling but there was on her exam. She is able to maintain all of her ADLs although her right-hand feels tight when grasping things. There was no previous history of trauma, tick bite, or recent travel. Review of system does not show fevers, infections, rashes, Raynaud's, oral ulceration or inflammatory bowel diseases. No history of hypercoagulable events. Patient has never smoked. Interestingly, she did have COVID illness in March, testing was not available to her at that time because she was treated as an outpatient and access to tests were only for inpatients. She later had positive COVID antibody test. Then her joint symptoms started in August when initial RF and CCP were positive; she wasn't seen by rheumatology until December where her symptoms persisted and her RF and CCP remained positive. During detailed clinical examination, there was synovitis in right 2nd and 4th PIP; with positive tenderness to full grasp in both hands; No restricted range of motion; No diffuse tender points. All other systemic examinations were not significant. X-ray of the patient's hand, wrists, and feet showed periarticular osteopenia, with joint space narrowing of 2nd and 3rd MCP, no erosions. Further Laboratory tests were negative for ANA and hepatitis. ESR, CRP, and Thyroid function within normal limit.

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Health quest Internal Medicine residency

A RARE CASE OF VERY LONG NMO-IgG-NEGATIVE LONGITUDINALLY EXTENSIVE TRANSVERSE MYELITIS IN A MIDDLE-AGED FEMALE

Introduction: Neuromyelitis optica spectrum disorders (NMOSD) are severe CNS disorders involving autoimmune demyelination of the optic nerves and spinal cord. Presence of aquaporin-4 antibodies (NMO-IgG) has >90% specificity for NMOSD. A hyperintense spinal cord lesion involving â‰¥3 vertebral levels on sagittal T2 weighted spinal MRI is pathognomonic for longitudinally extensive transverse myelitis (LETM), an uncommon subtype of NMOSD. Testing for NMO-IgG in suspected LETM has diagnostic and prognostic implications, as NMO-IgG-positivity portends more severe disease, >60% risk of optic neuritis and relapse within 12 months. We present the case of a female who had NMO-IgG-negative LETM with substantial spinal involvement.

Case Presentation: A 54-year-old woman presented to the ED with a 3-day history of fever, lower back pain, paraparesis and urinary retention. Neurologic examination was remarkable for hyporeflexia and decreased sensation to light touch in bilateral lower extremities. Initial laboratory workup was normal, except for lactic acidosis. Brain MRI showed no evidence of acute demyelinating disease. MRI of the thoracic spine showed diffuse intramedullary T2 hyperintensity and mild fusiform cord expansion extending from T4 to T12, which was suggestive of LETM. Lumbar puncture was performed; CSF showed pleocytosis but was otherwise negative for infectious processes. Additional labs/imaging ruled out HIV, syphilis, SLE, tuberculosis, Sjogren's syndrome, hepatitis, Lyme disease, West Nile encephalitis, and sarcoidosis. IgG autoantibodies to aquaporin-4 were negative. Preliminary diagnosis of LETM was made and, on day 3, the patient was started on IV Solu-Medrol 1g daily. After 5 days on high-dose steroids with no improvement in symptoms, plasmapheresis was initiated on day 7, with gradual improvement in her neurological function. After completing 5 sessions of plasmapheresis on alternate days, her strength had improved remarkably. She was discharged on day 16 to an acute rehabilitation facility with neurology follow-up.

Discussion: Seronegative LETM is seldom reported in the literature, usually with a young male predilection. Moreover, LETM involving >6 vertebral levels is rare. Our case highlights seronegative LETM involving up to 8 contiguous vertebral levels in a middle-aged female. Absence of NMO-IgG does not preclude diagnosis of LETM; rather, it suggests a better prognosis. Besides the spinal MRI findings, our patient satisfied other diagnostic criteria for LETM â€“ clinical features of acute neuritis, negative brain MRI findings, and absence of optic neuritis at presentation. High-dose IV steroid therapy for 3-5 days is the first-line treatment for LETM, with most patients experiencing at least partial recovery. Evidence-based criteria predicting good outcomes with plasmapheresis include minimal disability at onset, preserved reflexes, and short disease duration; so, we initiated plasmapheresis early. Despite the very long spinal involvement, our patient had a good outcome.

Therefore, it is important to consider NMO-IgG-negative LETM in patients with a similar presentation and start appropriate treatment early.

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I Can’t Believe It's Not Diabetes: A Case of Persistent Hypoglycemia in the Setting of Low Glycogen Reserves

The effect of ethanol on blood glucose concentrations is dependent on one’s nutritional state. In the setting of malnutrition, when liver glycogen stores are low, consumption of ethanol can produce hypoglycemia. We present a case of asymptomatic persistent hypoglycemia in the setting of chronic alcohol consumption and low glycogen reserves.

A 37-year old undomiciled female with a history of schizophrenia controlled with Haldol and alcohol use disorder was brought in by EMS after being found unresponsive in a local park holding a bottle of vodka. Upon presentation the patient was hemodynamically stable, not oriented to time, tremulous with a blood alcohol level of 158 mg/dL, blood urea nitrogen (BUN) of 3 mg/dL and a finger stick glucose concentration of 43 mg/dL. The patient responded to 1 amp of D50W, a D10 normal saline bolus, continued on D10 maintenance fluids, and then admitted to the ICU stepdown unit for management of persistent hypoglycemia.

Alcohol withdrawal was primarily managed with a Chlordiazepoxide taper and Lorazepam. Chest X-ray and CT of the abdomen and pelvis were unremarkable. Evaluation for adrenal insufficiency, insulin antibodies, or insulin producing tumors with ACTH stimulation test, C-peptide, cortisol, proinsulin, insulin-growth factor II, beta-hydroxybutyrate, and insulin antibodies was negative. The patient would become rapidly hypoglycemic within 1-2 hours postprandially, achieving levels as low as 15 mg/dL; the patient was asymptomatic during these events.

We continued correcting electrolyte imbalances and encouraged oral intake to improve her nutritional status. After a 2-week hospital course, the patient was stable for discharge with an improved BUN of 21 mg/dL and serial fasting glucose concentrations ranging from 70-100 mg/dL.

During fasting, the liver maintains glucose homeostasis through two primary mechanisms: gluconeogenesis or glycogenolysis. Ethanol consumption inhibits gluconeogenesis through the accumulation of NADH, which prevents the oxidation of lactate and pyruvate. Since ethanol inhibits hepatic gluconeogenesis, alcohol induced hypoglycemia would only occur if glycogen reserves in the liver are depleted . Glycogen serves as a short-term fuel source, helping maintain normal blood glucose for several hours. A decrease in total nutritional intake, as seen in our patient, would predispose the patient to produce states of hypoglycemia (serum glucose â‰¤ 70mg/dL). The low BUN levels in our patient indicated inadequate consumption of protein. Her history of being undomiciled, the lack of laboratory findings signifying other likely etiologies, and resolution of persistent hypoglycemia with the incorporation of a balanced diet was consistent with low glycogen reserves being the cause of her symptoms.

In cases of persistent hypoglycemia in the settings of chronic alcoholic consumption, clinicians should suspect low glycogen reserves and appropriately reinstate a diet. Strict monitoring of blood glucose concentrations and electrolytes are imperative to avoid complications of refeeding syndrome and hypoglycemia.

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A TROIKA OF TRICUSPID VALVE THROMBUS, BILATERAL UPPER EXTREMITY DEEP VENOUS THROMBOSIS AND PULMONARY EMBOLISM

Introduction

Tricuspid valve (TV) thrombus with concomitant upper extremity deep venous thrombosis (UEDVT) and pulmonary embolism is rarely observed.

Case Description

A 39-year-old woman was admitted to the intensive care unit (ICU) following a near-syncopal episode with 2 days of dyspnea, pleuritic chest pain and palpitations. In the past, she was treated with surgery and chemotherapy for ovarian cancer. She was afebrile, tachycardiac and hypoxic. Lungs and precordium examinations were unremarkable. Mild swelling and tenderness over bilateral upper extremities were noted.

Electrocardiogram revealed rate 145 beats/minute with nonspecific old T-wave changes inferior leads. Laboratory workup revealed leukocytosis, mildly elevated troponin and negative swab for coronavirus disease-2019. Pulmonary angiogram showed severe bilateral PE of lobar arteries extending into distal branches along with straightened interventricular septum indicating right ventricular (RV) strain. Doppler ultrasound of upper extremities showed thrombosis in bilateral cephalic and basilic veins. Transthoracic echocardiography (TTE) revealed dilated RV with decreased systolic function and flattened septum. A large mobile echogenic structure [1.0cm X 0.95cm] was attached to the atrial aspect of anterior TV leaflet with moderate tricuspid regurgitation.

Patient was initially managed in the ICU with intravenous unfractionated heparin and oxygen therapy. After 24 hours, she was transferred to the telemetry unit. In 3-4 days, heparin was transitioned to oral apixaban on which she was discharge. Repeat TTE in 3 weeks did not reveal a structure attached to tricuspid valve.

Discussion

This case illustrates a rare but life-threatening complication of UEDVT particularly when concomitant with significant PE. In our patient, a thrombus got entrapped on the TV anterior leaflet. Anterior leaflet has a larger surface area under significant strain in a rapid and dynamic environment, inherent characteristics predisposing anterior leaflet to endothelial injury and thrombus entrapment.

Based on the RV/LV ratio >1 with straightened interventricular septum and PE severity index score, there was intermediate-high risk for clinical deterioration warranting careful monitoring. Heparin instead of thrombolysis was chosen due to the absence of hemodynamic instability. Repeat TTE within three weeks did not reveal the structure attached to the anterior tricuspid leaflet suggesting resolution of the thrombus.

We reason that a troika of tricuspid valve thrombus, UEDVT and PE make for an interesting presentation but their simultaneous presence is no less than an impending danger considering associated hemodynamic instability and increased mortality. Prompt clinical assessment, work up, application of risk stratification tools and close monitoring can guide the management and improve outcome. Repeat TTE may be used to assess for tricuspid thrombus resolution.

Wardah Khan MD

View Poster

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Educating ED staff on Palliative Medicine and the Benefits of Initiating Consults at the ED: A Quality Improvement Project.

Introduction: A review of palliative medicine consults at Mather Hospital showed most were initiated by hospitalists or residents after an average length of stay of 3-4 days. Between January and November 2018, 5 (1% of total palliative consults) palliative consults were initiated by the ED. The low number of palliative medicine consults from the ED was thought to be a result of deficits in the ED staff's understanding of palliative medicine and the benefits of initiating a consult while the patient is in the ED.

Methods: The palliative medicine staff provided an educational session to the ED staff which included nursing, physicians, physician assistants, and nurse practitioners. The question-and-answer session and PowerPoint presentation focused on defining palliative medicine and benefits of early intervention of palliative medicine. They focused on how advanced illness patients present to the ED which can lead to lengthy inpatient stays until end of life, and how palliative medicine can intervene and prove beneficial for the system and patient. Session also concentrated on qualifying factors for palliative consult, differences between palliative and hospice care, an overview of symptom management provided by palliative medicine, an overview on advance care planning/advanced directives provided by palliative medicine, procedures for palliative medicine consult requests and how to contact the palliative medicine team.

Results: The months following just this one interactive educational session showed a large increase in palliative medicine consults from ER. Consult numbers were followed over 18 months and showed an average of 19 consults a month and a 278% increase in consults from the ER.

Conclusion: The hospital was able to identify that palliative medicine consults were being started several days after the patient was admitted to the inpatient service. Data from this project showed a large increase in the number of palliative medicine consults from the ED after one educational session with the ED staff identifying and addressing knowledge deficits regarding palliative medicine.

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A Rare Case of Sacral Pott's Disease

Introduction: A total of 1.4 million people died from Tuberculosis (TB) worldwide in 2019. This infection can have devasting effects to the lungs and other organs if not treated. Tuberculosis spondylitis, or '"Pott's Disease,â€ is a rare extrapulmonary manifestation of TB involving the spine, seen in 1-3% on TB cases. Very few cases of TB with sacral involvement have been reported, particularly in the United States. We present a case report of extrapulmonary TB with sacral involvement in a 27-year-old male who initially presented with systemic symptoms thought to be related to a hematologic malignancy.

Case Description: 27-year-old male from Senegal with no significant past medical history presented to the emergency department for severe lower back pain for a few weeks. The pain was dull, 8/10 in intensity, radiating to the hips bilaterally, intermittent, progressively worsening, aggravated by ambulation, alleviated by lying flat and Acetaminophen. He also had unintentional weight loss of 40 pounds and night sweats for 2-3 months. He had no family history of malignancy. He was tachycardic and afebrile on admission. Physical examination was significant for decreased right lower lung breath sounds and moderate tenderness to palpation of the lower spine. Admission labs were significant for leukocytosis (white blood cell count 13,120 uL) and elevated alkaline phosphatase 538 IU/L. Computed Tomography (CT) scan of the chest with contrast on admission showed a large loculated right pleural effusion and a pathological right pericardial lymph node. Thoracentesis with pleural fluid cytology analysis was negative for malignancy. CT scan of the abdomen and pelvis with contrast showed a destructive process centered on S1. Further lab work including blood cultures, urine culture, tumor markers such as CEA, CA19-9, AFP, and testing for hepatitis and HIV, were all unremarkable. QuantiFERON testing was positive twice, however, four acid fast bacilli (AFB) sputum smears and mycobacterium tuberculosis complex DNA PCR of the sputum were negative. Magnetic resonance imaging (MRI) of the pelvis with and without contrast showed a large exophytic mass with aggressive bony destruction of S1. Sacral biopsy revealed caseating granulomatous inflammation associated with giant cells and extensive necrosis, and was negative for malignancy and AFB staining.

Discussion: Very few cases of TB with sacral involvement have been reported, particularly in the United States, which can pose a diagnostic challenge. Despite the fact that our patient lacked clear clinical or radiologic evidence TB, the sacral biopsy finding of caseating granulomas was highly suggestive extrapulmonary TB. A biopsy sample was sent for mycobacterium tuberculosis culture, which should take 40-60 days. Our patient was started on; rifampin, isoniazid, pyrazinamide, and ethambutol. He tolerated initiation of this regimen well and was discharged after a 15 day hospital course with instructions to follow up in 1-2 weeks.

Resident/Fellow Clinical Vignette

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Tremors as a Side Effect of Carbamazepine Use in Trigeminal Neuralgia

We present a 69-year-old female with a medical history of trigeminal neuralgia and hypertension who presented with complaints of 5 days of tremors, dizziness and right-sided facial pain. She was recently diagnosed with trigeminal neuralgia and was placed on carbamazepine and gabapentin. Shortly after starting these medications the patient began to experience dizziness, diplopia, and resting tremors of bilateral hands which prompted her to come to the hospital. On exam there were no focal neurological deficits noted. It was decided to decrease the carbamazepine and increase gabapentin dosing. Subsequently, the dizziness, diplopia and resting tremors dissipated; however, her pain severely exacerbated as a result. Despite given a myriad of therapy to diminish her pain, it remained uncontrolled.

Carbamazepine is a medication used in the treatment of seizures and neuropathic pain. It acts by inhibiting cellular voltage gated sodium channels prompting the cell's inactive phase, leading to decreased frequency and inhibition of the action potentials that contribute to pain. Carbamazepine may require increased dosages to alleviate pain symptoms. Trigeminal neuralgia is a rare clinical diagnosis of severe sharp, stabbing pain in the distribution of the fifth cranial nerve. Patients have described this pain as an electric shock-like sensation, lasting from seconds to hours. Carbamazepine is currently the first line medication for treatment of trigeminal neuralgia. Unfortunately, many patients are unable to tolerate this medication due to its severe adverse effects, most commonly dizziness. While tremors are a well known withdrawal symptom from sudden discontinuation of the medication, there is limited data identifying tremors as an adverse reaction. In our patient, the tremors were severe and debilitating. With a decreased dose of carbamazepine, the tremors resolved; however, the patient experienced a severe trigeminal neuralgia pain exacerbation. Multiple abortive and adjunctive therapies were utilized to decrease the patient's pain including baclofen, gabapentin, topical lidocaine gel and phenytoin with no improvement. Attempts were made to reincorporate higher doses of carbamazepine closer to the patient's home dose, however the tremors recurred. After several days of improving tremors with worsening facial pain, it was decided to transfer this patient to a neurosurgical service for gamma knife radiosurgery. One month after surgery, the patient reports complete resolution of her pain. She remains on a lower and more manageable dose of carbamazepine with gabapentin and has had no further tremors.

Carbamazepine is currently used as a mainstay therapy for trigeminal neuralgia. Due the uncommon nature of this disease, research towards novel treatment and methods of diagnosis continue to be investigated. By sharing this case we aim to bring light to a rare adverse effect of high doses of carbamazepine, which can help clinicians with management of trigeminal neuralgia.

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View Poster

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Primary immunodeficiency in a 74-year-old male with bronchiectasis: A rare case of CVID

Introduction

Common variable immunodeficiency (CVID) is a primary antibody immunodeficiency (estimated prevalence 1 in 50,000, bimodal peak age of onset first, third decades of life). Late-onset primary immunodeficiency is rare. We present an elderly man with no prior infections or hospitalizations with chronic productive cough determined as bronchiectasis diagnosed with CVID.

Case description

A 74-year-old male with a history of coronary artery disease with stent placement, hypertension was referred to pulmonology for chronic productive cough. He reported eight months of constant, unresolving productive cough, particularly at night, with wheezing/shortness of breath. Previous treatment included antibiotics (2x/some relief) and steroids (1x/little benefit). He reported decreased appetite, fatigue, and a 20â€“25-pound weight loss. He has no prior hospitalizations for pneumonia; unremarkable family history; former smoker (packs-per-day/1 x 9 years). Physical examination: bilateral rhonchi and scattered wheezes involving all fields; normal cardiovascular exam; no lymphadenopathy, hepatosplenomegaly, or skin abnormalities.

Pulmonary function tests: moderate obstruction FEV1/FVC 69% with a 16% bronchodilator response and mild restriction with decreased DLCO. A steroid inhaler trial showed little benefit. Chest CT: scattered mucus plugging, borderline mediastinal lymphadenopathy and mildly enlarged lymph nodes in upper abdomen, presumably reactive. Bronchoscopy samples grew Moraxella. AFB and fungal cultures: negative. A 10-day course of moxifloxacin saw significant improvement. His repeat sputum culture one month later grew pseudomonas and was treated with a 10-day course of Levofloxacin. One month later, sputum production was at his prior level. Repeat chest CT: patchy alveolar opacities and bronchial wall thickening with mucoid impaction. Labs for bronchiectasis and acquired immunodeficiency: IgG 46. IgM < 8 and IgA < 18. He was referred to an immunologist. Lab work: T and B cell panel showed CD4 510, CD8 467, and CD19 75 (low); ANA and RF negative; ESR and CRP not elevated; HIV and hepatitis negative; Alpha 1 antitrypsin normal; CF mutations negative. Oncology was consulted for possible malignancy due to mild abdominal lymphadenopathy. Bone marrow biopsy: decreased B cell; no malignancy. Given his profound hypogammaglobulinemia and recurrent pulmonary infections in the absence of secondary causes of hypogammaglobinemia, he was diagnosed as CVID.

After one month of weekly subcutaneous immunoglobulin replacement therapy, his IgG levels reached 445 with decreased coughing/wheezing. Chest CT: near complete resolution of ground-glass opacities. Pulmonary function tests normalized with a slight reduction in DLCO. While his IgG levels reached 780 on treatment, he developed pulmonary infection with pneumocystis jirovecii a few months later and was treated adequately but died shortly with hypoxic respiratory failure due to multifocal pneumonia.

Discussion

CVID is extremely uncommon in elderly patients with a diagnostic delay of 6-7 years. This case posed a diagnostic challenge and stresses the importance of a high index of suspicion in elderly patients with bronchiectasis.

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View Poster

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Schizophrenia with Underlying Wernicke's Encephalopathy in a Young Adult

A 28 year old male with past medical history o hospitalization for schizophrenia now controlled on Risperidone, presented to emergency department after being found down for unknown period of time at home. Routine blood work and CT brain was performed, which was grossly normal. As per patient's mother, he has most recently been noncompliant with Risperidone and she additionally noted that he has not left his room in some time. He denied any complaints in ED and ROS was otherwise negative. He was admitted to medicine service for further management of lactic acidosis and tachycardia. On evaluation he was minimally verbal.

On admission, patient presentation was suspected to be secondary to medication non-compliance and dehydration. Given increased distancing and becoming increasingly non-verbal, Psychiatry Team was consulted, and recommended to rule out organic causes of falls and changes in patient's personality. Neurology team was consulted who proceeded to order broad based work up for metabolic encephalopathy.

During physical exam on day 2 of admission, psych team noted new â€˜bilateral horizontal nystagmus' not initially noted in ED. Patient's mother noted that patient has not fallen once but has actually fallen many times, up to 3x a week for past 3 weeks; she had noted that patient's meals have remained untouched since discharge from prior psychiatric admission 1 month before. MRI brain resulted in bilateral hyperintensity of medial Thalami on Axial T2/Flair. Suspecting Wernicke's- serum Vitamin B1 (Thiamine) level was immediately drawn and treatment was initiated as discussed below. While receiving treatment, there was noted marked improvement within 48 hours in nystagmus, ambulation and encephalopathy.

Of note, Thiamine level resulted post patient discharge and was found to be 24 with normal range between 78 - 185 nmol/L.

Due to patient recent admission for Schizophrenia and with history of medication non-compliance, his presentation was initially felt to be an exacerbation of his Schizophrenia. Initial history was lacking collateral from patient's mother whose contribution was very important in this case. Patient was at high risk for metabolic derangements given his anorexia and with BMI of 14 it was assumed he was eating at home after being on Risperidone as previously documented, however that was clearly not the case. Given a patient with superimposed psychiatric illness it is easy to lose sight of the big picture. In this case although tachycardia and lactic acidosis improved with fluid hydration the patient's recent admission for similar presentation created an anchoring bias by which treatment for WE was delayed 24-48hrs and prolonged hospitalization. Patient tolerated treatment well and improved very quickly. He has not had readmission since being discharged.

Resident/Fellow Clinical Vignette

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IVIG treatment in patients with neurological manifestations of West Nile Virus

We review a case of a patient with confirmed West Nile Virus and immobility from lower extremity weakness who had a complete resolution in response to IVIG treatment. The patient is a 59-year-old male who presented to the hospital complaining of weakness in his lower extremities, body aches and joint pain for 4 days. He had been camping in a local state park in NY three weeks prior to his admission and noticed a new truncal pruritic, erythematous rash for 3-4 days associated with polyarthralgia and bilateral lower extremity weakness. On physical exam lower extremity strength in proximal muscle groups was 1/5 and bilateral Achilles reflex was 0/4. The patient did not have any saddle anesthesia or sensory deficits in lower extremities. A lumbar puncture showed CSF glucose of 68 mg/dL, protein 77 mg/dL, WBC 113/cumm, RBC 227/cumm. ELISA returned positive for IgM WNV. He was initiated on Acyclovir and Rocephin on day of admission and completed a five-day course and was discharged home. Unfortunately, he continued to have worsening lower extremity weakness and inability to ambulate and was readmitted ten weeks later and he was started on five day treatment of IVIG 0.4mg/kg/day, followed with twice monthly maintenance treatments which resulted in complete resolution of lower extremity weakness and ability to ambulate without assistance in few months.

The role of IVIG as an effective treatment for patients with WNV infection is not established and has not been tested in RCT studies. Treatment in our patient with IVIG was associated with complete recovery and hence should be studied more.

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TISSUE PLASMINOGEN ACTIVATOR AND DEVELOPMENT OF MYOCARDIAL INFARCTION

Early reperfusion therapy with tissue plasminogen activator (tPA) for acute ischemic stroke has long term mortality benefit despite known risk factors. Newly emerging and serious complications of tPA have been noted.

A 67-year-old female with past medical history significant for diabetes mellitus, hyperlipidemia, cerebrovascular accident in 2019 and coronary artery disease with percutaneous coronary intervention to left anterior descending artery presented with sudden onset weakness and numbness of left upper and lower extremities and speech difficulty. Magnetic resonance imaging (MRI) of brain showed acute infarct of right anterior thalamus. Computed tomography (CT) head revealed no acute intracranial bleed and patient received tPA. Lipid panel revealed triglycerides of 409 and elevated cholesterol and low-density lipoprotein. She subsequently experienced substernal crushing chest pain. Troponin was elevated at 3.00. Electrocardiogram showed ST elevations in inferior leads with reciprocal ST depressions. She was emergently transferred for our cardiac reperfusion facility for presumed ST-elevated myocardial infarction (STEMI). Patient was re-assessed by our stroke service and found to have neurological improvement since her tPA administration. However, she continued to have chest pain radiating down her left arm with numbness and weakness, nausea, and episode of vomiting. She was diaphoretic and drowsy on examination. Repeat troponin levels were down trending. Transthoracic echocardiography (TTE) showed normal heart function with 61% ejection fraction and without presence of interatrial shunt. Repeat CT head in 24 hours showed no hemorrhagic process. Deferred cardiac catheterization occurred on day two where 90% stenosis of right coronary artery was found and treated with stent placement. She recovered well, was started on dual antiplatelet therapy, and discharged with ezetimibe due to previous statin intolerance.

Our case represents the appropriate usage of tPA for acute ischemic stroke per the inclusion criteria which is well documented in literature. However, it proposes a new complication of tPA, which has been previously only documented in a few case reports. Our case clearly delineates how tPA immediately led to STEMI based on clinical presentation. Commonly known adverse effects of tPA include intracranial hemorrhage, angioedema, bruising and hypersensitivity. Developing acute MI immediately following tPA administration is a serious complication and not well documented. Suspected mechanism involves systemic thrombolysis causing dislodgement of arterial thrombi leading to embolization to coronary vessels. Our patient was high risk for atherosclerotic thrombi predisposing her to develop tPA induced MI. However, cardiac history is not required to develop this consequence as noted in other case reports. Additionally, when tPA was administered with presence of cardiac thrombus in patients with ischemic stroke none were noted to develop MI. Interestingly, the reverse phenomena with tPA used for MI subsequently causing ischemic stroke has been readily documented. Further trials establishing this rare and dangerous complication of tPA are needed.

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View Poster

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Atypical presentation of monoclonal antibody associated PML

Progressive multifocal leukoencephalopathy (PML) is a rare but serious brain infection caused by the mutation of JC virus in immunocompromised individuals. It is most common in patients with HIV infection; however, it can be seen in non-HIV patients on immunocompromising medications. Brain MRI findings are dynamic, rapidly evolving and most commonly demonstrate multifocal signal abnormalities involving the cerebral white matter. We herein present a case of a 74-year-old male who was initially presumed to have a stroke; however, clinical deterioration and repeat imaging led to the diagnosis of PML.

A 74-year-old male with a history of transient ischemic attack, Lyme disease, melanoma and chronic lymphocytic leukemia in remission presented with a two-month history of progressive left sided neglect, difficulty walking and frequent falls despite physical therapy. At the time of onset of symptoms, MRI showed findings suspicious for a small acute infarction in the right occipital lobe and lumbar puncture was unremarkable. Differential diagnosis at that time was limited to suspected stroke. He worked with occupational therapy for three weeks and was told he was declining. Repeat outpatient MRI showed progression of a nonenhancing lesion in the right occipital lobe with expansion into the parietal and temporal white matter and the corpus callosum. He was sent to the hospital for further evaluation of presumed CNS lymphoma. Additional MRI performed following admission suggested PML and demyelinating disease as the leading diagnosis. Given the initial negative lumbar puncture, he was sent for a brain biopsy, which confirmed the diagnosis of PML.

Physicians should recognize the possibility of PML not only in patients on monoclonal antibody therapy, but also patients who have been on these medications in the past. Because patients may initially be asymptomatic, it is important to include PML in the differential diagnosis for early detection and treatment of the underlying cause as to prevent progression of disease.

Resident/Fellow Clinical Vignette

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Transudative pleural effusion as an initial presentation of a disseminated cryptococcosis infection in a HIV-negative patient with cirrhosis.

Background:

Cryptococcus neoformans (C. neoformans) is an invasive fungus that can lead to various infectious presentations such as pneumonia, meningitis and disseminated disease. It is commonly seen in patients with HIV. It can also cause disseminated infection in HIV-negative individuals, particularly those with other medical comorbidities such as renal failure, diabetes mellitus, autoimmune disorders, or liver disease. We present a case of disseminated Cryptococcus infection who initially presented with a transudative pleural effusion that was antigen-positive and culture-positive for C. neoformans. To our knowledge, this is the first case report of a transudative pleural effusion with positive Cryptococcal antigen and culture.

Case Description:

We describe a 32-year-old male with end-stage liver disease (ESLD) who presented to an outside hospital with dyspnea and increased oxygen requirements. The pleural fluid analysis demonstrated a positive Cryptococcal antigen. The patient was placed on IV fluconazole and transferred to our hospital for a higher level of care. He initially showed clinical improvement after fluconazole treatment, therapeutic paracentesis, and thoracentesis. However, the infection was eventually found to be widespread as he had positive Cryptococcal antigen and cultures in his pleural fluid, serum and cerebrospinal fluid (CSF). His antimicrobial regiment was escalated to amphotericin B and flucytosine. His medical condition deteriorated, and the patient passed away after being removed from life support.

The patient's presentation was especially unique; he had a transudative pleural effusion, which was unexpected for Cryptococcal pleural infection. Due to his clinical presentation and acute kidney injury (AKI), treatment with amphotericin B and flucytosine was delayed with a preference for fluconazole, an adequate treatment option for mild to moderate disease.

Conclusion:

Due to its rarity and range of clinical severity, diagnosis of disseminated Cryptococcosis can be delayed. We present this case to bring awareness of this diagnosis as a differential in immunocompromised patients regardless of a transudative pleural effusion. Early aggressive treatment with amphotericin B and flucytosine could be lifesaving in these cases.

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Early obstruction after gastric balloon placement

Introduction

Intragastric balloon placement has been the minimally invasive endoscopic therapy used to aide weight loss management for obese patients since the US Food and Drug Administration (FDA) approval in 2015-2016. We present a case of gastric outlet obstruction by intragastric balloon which prompted early removal.

Case Report

39 year old Hispanic female, with class I obesity, presented with intractable nausea, vomiting, epigastric abdominal pain for 2 weeks without fever or constipation or diarrhea. She had Orbera gastric balloon placement for weight loss in Dominican Republic five weeks prior to hospital admission. She was not able to take liquid diet which she has been taking since gastric balloon placement, despite taking anti emetics, pantoprazole, ibuprofen as needed.
She was waiting to get steroid and levosulpiride prescriptions to be delivered from Dominican Republic. She was found to have hypokalemia, hypomagnesemia, anion gap metabolic acidosis, mildly elevated lipase level, dehydration and acute renal insufficiency. CT abdomen pelvis showed gastric outlet obstruction by Orbera gastric balloon, questionable discontinuity of a small portion of the balloon versus adjacent air within the stomach. She was treated with intravenous hydration, electrolytes replacement, and anti emetics as needed. She initially refused Orbera balloon removal, and was discharged with advice to avoid NSAID and steroids. A week later, she was readmitted due to intolerable symptoms. Upper endoscopy showed gastric balloon in the distal body/antrum, mild diffuse gastritis, normal duodenal bulb. It was fractured with Raptor forceps, and pulled through the esophagus allowing the fluid to drain into the stomach. She was then able to tolerate diet and was discharged to home.

Discussion

Intragastric balloon placement can be considered for patients with a body mass index of >27 kg/m2 with comorbidities or between â‰¥30 and â‰¤40 kg/m2 who do not respond to behavioral modification programs, dietary changes or with pharmacotherapy. Saline filled Orbera (single intragastric balloon system), saline and methylene blue filled ReShape (integrated dual balloon system), and air filled Obalon balloon system are approved to use in the USA. Maximal time of use is for 6 months. 80% of the total weight loss with Orbera intragastric balloon occurs within the first 3 months. Intragastric balloon decreases intragastric volume by occupying with 400ml-700ml liquid filled inside the balloon, causes gastric distention which promotes early satiety and reduces food intake. Spontaneous balloon overinflation and acute pancreatitis caused by mechanical compression are possible complications warned by FDA. Other possible complications are esophagitis, gastritis, gastric ulcer formation, gastric perforation, gastric outlet obstruction caused by distal migration or overinflated gastric balloon, and bacteria growth in the fluid filled in the gastric balloon. Clinicians have to be mindful of serious complications of intragastric balloon placement and intolerable side effects.

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Zieve syndrome: A Case of hemolytic anemia in alcoholics

Introduction

Zieve's syndrome (ZS) is an uncommonly recognized form of acute hemolytic anemia that manifests as a triad of cholestatic jaundice, transient hyperlipidemia, and hemolytic anemia in heavy alcohol users. The syndrome was first described in 1957 by Dr. Leslie Zieve. While there are many etiologies of anemia in alcoholics, ZS is distinct in that it is an acute hemolytic anemia. We present a case of ZS in a patient with alcohol intoxication.

Case

A 35-year-old man with history of chronic alcoholism presented with complaints of generalized weakness for 2 days. He admitted to drinking 5 bottles of beer daily. On examination, he was lethargic with tremors on outstretched hands. Initial labs showed blood alcohol level of 301 mg/dl, anemia (11.7gm/dl), thrombocytopenia (118,000/ Î¼l), and bilirubinemia [total bilirubin 3.4 mg/dl, conjugated bilirubin 1.7 mg/dl]. Anemia was found to be hemolytic with a decreased haptoglobin, and increased lactate dehydrogenase level. Further work up showed elevated serum ferritin levels, but normal serum vitamin B12 and folate levels. Additionally, a lipid panel revealed severe hypercholesterolemia (>1000 mg/dl) with accompanying triglyceridemia (926mg/dl). Work up for extraneous causes of hepatitis and liver damage was also done including a hepatitis panel and iron studies for hemochromatosis, which were all negative. With the triad of hemolytic anemia, cholestasis, and hypercholesterolemia the patient was diagnosed with ZS - a self-resolving rare complication of alcoholism. Supportive treatment was given and the patient was discharged once fully recovered.

Discussion

The pathogenesis of ZS is indeterminate but is defined by the triad of jaundice, hemolytic anemia and hyperlipidemia. Jaundice in ZS is caused by direct bilirubin elevation which suggests predominant cholestatic alcohol induced liver damage instead of hemolytic anemia.

Hyperlipidemia in ZS can be transient and possible mechanism includes episodic massive mobilization from fat to or from the fatty liver and dysregulated blood lipids secondary to alcohol induced pancreatic damage.

The pathophysiology of hemolysis in ZS is not fully understood. Dr. Zieve suggested that hyperlipidemia and presence of abnormal lipids (lysolecithin and lysocephalin) plays a role in hemolysis by disrupting RBC membrane. In addition, alcohol-induced vitamin E deficiency, which reduces polyunsaturated fatty acid levels and causes oxidation of reduced erythrocyte glutathione, leads to enzyme instability and erythrocyte hemolysis. Moreover, Coombs test-negative hemolysis is a salient feature in this triad, which may indicate it is less likely to be an autoimmune hemolytic anemia and would be insensitive to glucocorticoid therapy. Abstinence from alcohol is the most effective treatment.

Conclusion:

Even though ZS is rarely reported, it should be suspected in patients with worsening hemolytic anemia with no apparent explanation, especially in alcoholics. Being aware of ZS can limit workup, cost and help avoid using unnecessary drugs that can worsen the condition.

Nso Nso

View Poster

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Efficacy and Safety of drug eluting stents versus bare metal stents in patients with ischemic heart disease requiring percutaneous coronary intervention

Background: Ischemic heart disease is one of the most common heart disorders worldwide and many patients require percutaneous coronary intervention (PCI) with stent implantation for management. We aim to compare drug eluting stents (DES) versus bare metal stent (BMS) in terms of efficacy endpoints

Aim: To compare the efficacy of DES vs BMS in patients with IHD requiring PCI.

Method: We searched in PubMed and Cochrane databases for randomized clinical trials in English language from inception to January 2020. We used Cochrane's tool to assess the risk of bias between the studies. We used the risk ratio (RR) and 95% Confidence Interval (CI) for dichotomous data during analysis; also we assessed the heterogeneity using I2 or P value of the" chi square test "and applied random-effects model for heterogeneous outcomes.

Results: Nine studies (10351 patients) were included in our review. We found that, compared to BMS, the DES group was associated with reduced rates of target vessel revascularization (TVR) (RR: 0.30; 95% CI: [0.23, 0.39]; P < 0.001), the need for coronary artery bypass grafting (RR: 0.22; 95% CI: [0.08, 0.59]; P= 0.003), stent thrombosis events (RR: 0.57; 95% CI: [0.33, 0.99]; P= 0.05) and cerebrovascular events (RR: 0.69; 95% CI:[0.58, 0.82]; P < 0.0001). We noted no significant difference between both groups regarding the rates of bleeding events (RR: 1.22; 95% CI [0.92, 1.61], P= 0.17), Myocardial infarction (RR: 0.81; 95% CI [0.58, 1.13]; P=0.22) and death (RR: 0.71; 95% CI [0.46, 1.09]; P= 0.12).

Conclusion: Compared to BMS; DES has shown to be effective in reducing post-PCI incidences of TVR, CABG, stent thrombosis and cerebrovascular events. However, no significant difference was noted regarding bleeding events, MI and mortality.

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The Therapeutic Potential of Aspirin and/or NSAID-Based Single/Combination Therapies in Reducing the Predisposition of Colorectal Cancers in High-Risk Populations)

Background

The high incidence and prevalence of colorectal cancer (CRC) and its deleterious complications adversely impact the quality-adjusted life years and life expectancy of patients. The challenges of the least effective conservative treatment approaches warrant the development of novel therapies to increase the scope of survival and recovery in CRC patients. NSAIDs offer promising results in terms of minimizing the risk of CRC in predisposed patients. However, the current gaps in clinical literature regarding the CRC management potential of NSAIDs restrict their use in patients with colorectal cancer. This systematic qualitative review accordingly aims to investigate the CRC prevention claims of NSAID therapies and attain baseline information to inform future treatment decisions.

Methodology

The author shortlisted full-text articles by accessing PubMed, Google Scholar, Cochrane Library of Systematic Reviews based on the selection criteria. The selected articles included cross-sectional, prospective, preclinical, experimental, laboratory-based, cohort, case-control/nested case-control, and randomized controlled studies elaborating on the therapeutic efficacy of NSAID in CRC cases. The thematic assessment of the retrieved information via a meta-ethnography approach informed the findings of this systematic review.

Results

The findings revealed the therapeutic benefits of aspirin/NSAID-based prophylaxis in reducing the incidence/prevalence of CRC. The outcomes provided baseline information to validate the treatment advantage of NSAID monotherapy/combination therapy for challenging the clinical complications in CRC.

Discussion and Conclusion

This systematic review strengthened the currently reported claims for the CRC reduction potential of NSAID therapies. However, the study outcomes did not reveal the mechanism of action of NSAIDs to challenge the development of CRC in predisposed patients. The outcomes revealed the interactions of NSAIDs with COX-2 isoenzymes and genetic factors in terms of reducing the incidence of CRC. Prospective research studies should accordingly investigate current evidence regarding the CRC management potential of NSAIDs and explore comprehensive therapeutic pathways to enhance the treatment outcomes and survival duration of CRC patients.

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A RARE PRESENTATION OF LEFT VENTRICULAR OUTFLOW TRACT OBSTRUCTION DUE TO SYSTOLIC ANTERIOR MOTION OCCURRING 8 YEARS AFTER MITRAL VALVE REPLACEMENT

Introduction: Systolic anterior motion (SAM) is the dynamic displacement of mitral valve (MV) leaflets anteriorly toward the left ventricular outflow tract (LVOT) during systole. SAM can be induced by multiple conditionsâ€”most commonly with hypertrophic cardiomyopathy. Less frequently, SAM-like physiology might be observed shortly after mitral valve replacement (MVR). We present a rare case of SAM occurring 8 years after MVR.

Case Presentation: A 55-year-old woman presented to the ER with progressive dyspnea and sudden-onset chest pressure radiating to her neck. Her history included atrial fibrillation, CAD, COPD, active smoking, hyperlipidemia, hypertension, and bioprosthetic MVR 8 years ago for non-rheumatic mitral stenosis. Physical exam was notable for BP of 126/84 mmHg, HR of 75 bpm, grade 2/6 systolic murmur at the apex, a soft diastolic murmur at the left sternal border, and diffuse expiratory wheezes. Labs were remarkable for elevated BNP (286 pg/mL) and negative serial troponin-I (<0.03 ng/mL). EKG showed no ischemic changes. Transthoracic echocardiography (TTE) showed evidence of mitral regurgitation, severe pulmonary hypertension, and severe aortic insufficiency; with the mitral prosthesis protruding into the LVOT, thereby causing SAM-like physiology and LVOT obstruction with a peak gradient of 16.3 mmHg and peak velocity of 2.0 m/s. Transesophageal echocardiography (TEE) confirmed severe bioprosthetic MV dysfunction, a tri-leaflet aortic valve with severe regurgitation, and SAM-like physiology. Left cardiac catheterization showed normal coronaries. Following a multidisciplinary discussion, the patient underwent re-do MVR and aortic valve replacement. LVOT obstruction by the rim of the prosthetic MV was obvious intra-operatively. The patient tolerated the surgery well. She was started on daily aspirin and warfarin, and discharged home on post-op day 10. SAM-like physiology was absent in a 2-month post-op follow-up TTE, with significantly reduced LVOT peak gradient of 6.5 mmHg and peak velocity of 1.3 m/s. During her postoperative office visits, she reported improved exercise capacity and no complications.

Discussion: Dynamic SAM-induced LVOT obstruction occurs in 4-10% of patients after MVR. Clinical presentation ranges from asymptomatic disease to severe hemodynamic compromise. SAM can result in severe heart failure and has 20% risk of sudden cardiac death. SAM may occur in the early postoperative period following MVR (within days), or may have a delayed presentation, as late as 1-2 years. Presentation of SAM beyond 2 years post-MVR is very rare. Medical management, including adequate beta blockade, is the cornerstone of initial management, while structural damage to the prosthetic valve mandates re-do valve replacement. Our patient had additional indications for re-do surgery, besides SAM physiology, including severe aortic insufficiency and moderate-to-severe prosthetic mitral regurgitation. This case highlights the importance of long-term follow-up of patients after MVR to assess for SAM, which could occur with or without degenerative changes of the prosthetic valve.

Resident/Fellow Clinical Vignette

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Thyrotoxic Periodic Paralysis: A Rare Presentation of Grave's Disease in a Young Healthy Man

Introduction

Initially identified in male Cambodian refugees, thyrotoxic periodic paralysis (TPP) is a rare and potentially lethal complication of hyperthyroidism, characterized by muscle paralysis and hypokalemia. Although thyroid diseases are more prevalent in women, TPP is significantly more common in men, particularly of Asian descent. In the non-Asian population, the incidence is as low as 0.1â€“0.2%. The symptoms of hyperthyroidism may manifest before the onset of TPP, but may present concurrently. We present the case of a young Hispanic male who developed TPP as an initial presentation of Grave's disease.

Case Report

A 39-year-old male with no past medical history presented to the emergency department due to progressive bilateral lower extremity weakness for 7 days associated with chronic low back pain. He reported unintentional weight loss over the past 3 months. His vital signs showed mild elevation in blood pressure and tachycardia. Physical examination revealed decreased strength 4/5 in both lower extremities, involving the proximal and distal muscle groups. Sensation, tone and reï¬‚exes were normal bilaterally. Mild tremors were noted on the outstretched hands. Labs were significant for hypokalemia (1.7 mmol/L), hypomagnesemia (1.3 mEq/L), and extremely low TSH (0.01 mIU/mL). Free T3 (12.25 ng/mL) and free T4 (2.98 ng/mL) were elevated. Computed tomography scan of the lumbosacral spine did not show any pathology. He was admitted to the hospital for monitoring on telemetry due to electrolyte abnormalities. Endocrinology was consulted and further workup showed elevated levels of thyroid stimulating immunoglobulin (TSI), thyroglobulin antibody (TgAb), and thyroid peroxidase (TPO). Ultrasound showed a heterogeneous hypervascular thyroid without discrete nodules. Based on these findings, the cause of hypokalemic periodic paralysis was determined to be secondary to thyrotoxicosis. The patient was started on Methimazole and Propranolol, electrolytes were repleted, and the weakness resolved. The patient was advised for regular follow up for maintaining an euthyroid state to prevent further attacks.

Discussion

Periodic paralysis manifests as painless muscle weakness, TPP is a rare sporadic cause of this condition. Patients may be misdiagnosed at presentation. In fact, cases of unexplained sudden deaths afflicting young Asian males for many years were later found to be caused by TPP. The differential diagnosis of patients with sudden weakness must include other causes of periodic paralysis, acute myelopathies, Guillain-Barré syndrome, and myasthenic crisis amongst others. The features of hyperthyroidism in patients with TPP may be subtle. In our patient, unintentional weight loss, hypertension, tachycardia, and fine tremors were suggestive of hyperthyroidism. An increased awareness among physicians can help facilitate early diagnosis, appropriate treatment, and prevention of complications including death. This case report showcases a rare condition requiring a high index of suspicion for rapid diagnosis and treatment.

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A rare case of Streptococcus pyogenes induced secondary peritonitis in a patient with cirrhosis

Introduction:

In patients with cirrhosis, secondary peritonitis is uncommon, representing only 4.5% of all cases of peritonitis, and is associated with a high mortality of 53-66%. Streptococcus pyogenes, a common skin microbe, is an uncommon cause of secondary peritonitis. We present a woman with cirrhosis, ascites, and a large umbilical hernia admitted with abdominal pain who was found with a multi-loculated, purulent, abdominal collection due to Streptococcus pyogenes consistent with secondary peritonitis.

Clinical Vignette:

A 42-year-old woman with past medical history of autoimmune hepatitis complicated by decompensated cirrhosis with ascites who had been off of immunomodulators for 7 months presented with eight days of worsening diffuse abdominal pain. On exam she was afebrile and had abdominal distention with diffuse tenderness without rebound or guarding. A large, umbilical hernia with breakdown of overlying skin and a left inguinal hernia were present. Labs were notable for a serum sodium of 104 mEq/L due to low effective circulating volume which improved with volume expansion with albumin. A paracentesis produced ascitic fluid with a protein 5.2g/dL, glucose < 5 mg/dL, lactate dehydrogenase (LDH) 14,252 U/L, and a white blood cell (WBC) count of 59,200 with 83% polymorphonuclear cells (PMNs). Abdominal imaging showed large ascites in communication with loculated fluid collections in the umbilical and left inguinal hernias. She was started on ceftriaxone (2g) and metronidazole (500mg). Ascitic fluid cultures grew pan-susceptible Strep. pyogenes. The loculated collections from the hernias were drained yielding purulent fluid. Gram stain was positive for moderate gram positive cocci in chains and clusters though cultures remained negative. Despite 2 weeks of antibiotics and local drainage, she had persistence of clinical peritonitis and fevers with repeat diagnostic paracentesis showing an increase in WBCs to 82,760 with 98% PMNs. She underwent laparoscopy with peritoneal washout. Dense adhesions and fibrinous exudate were seen throughout the peritoneum which were lysed and 6L of purulent material was removed. Pathology demonstrated acute fibrinous inflammatory exudate with dense fibrous tissue and cultures were negative. Following the washout and broadening to piperacillin-tazobactam (3.375g), the fevers subsided, and she was discharged on two weeks of cefpodoxime (200mg).

Discussion:

Cases of secondary peritonitis in patients with cirrhosis are uncommon and are associated with high mortality. Here we present the noteworthy case of a woman with cirrhosis due to autoimmune hepatitis found to have Streptococcus pyogenes secondary peritonitis, a rare etiology, likely due to translocation through the compromised skin overlying her umbilical hernia. While rare, this case highlights the importance of prompt evaluation for secondary peritonitis with ascitic fluid with high WBCs, protein, LDH, and low glucose. Early surgical consultation for patients is paramount as non-surgical management is often inadequate in managing secondary peritonitis with loculated ascites.

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A rare case of isolated penile calciphylaxis

INTRODUCTION

Calciphylaxis is a rare systemic vascular disease that involves the progressive calcification of small arteries and capillaries. It commonly presents with skin mottling in a livedo reticularis pattern. Penile involvement only accounts for approximately 1% of all calciphylaxis cases, with only 62 known reported cases in literature. Sole penile involvement is extremely rare and clinical management remains challenging.

CASE

A 56-year-old male with end stage renal disease, coronary artery disease, diabetes, and obstructive sleep apnea, presented with syncope. Vitals on admission were noted as follows: body temperature 100.9 F, pulse 99 beats/min, blood pressure 158/84 mmHg, and respiratory rate 18. On exam, patient was found to have orthostatic hypotension and a solitary necrotic lesion around the glans penis. Laboratory studies were notable for a white blood cell count of 13.29 K/uL with a neutrophilic predominance, BUN 24 mg/dL, creatinine 5.92 mg/dL, calcium 9.0 mg/dL, phosphorus 4.5 mg/dL, albumin 3.2 g/dL, serum 25-hydroxyvitamin D 17.8 ng/mL, and serum parathyroid hormone 195 pg/mL. CT head did not show any acute intracranial findings. EKG was normal sinus rhythm and echocardiogram revealed normal left and right systolic ventricular function. Patient was started on ceftriaxone for empiric treatment of possible penile skin infection. CT angiography of the chest revealed extensive small and medium-arterial calcification. CT angiography of the pelvis revealed extensive atherosclerotic calcifications of the pudendal and penile arteries. Penectomy was deferred and patient was started on sodium thiosulfate. Patient was discharged home with pentoxifylline and sildenafil to aid penile perfusion and close follow-up. At 1 month follow-up, patient penile pain, calcium, and phosphorus levels were well-controlled.

DISCUSSION

Penile calciphylaxis associated in patients with end-stage renal disease and carries an estimated mortality rate of 50% at 3 months. Tissue biopsy is not required for its diagnosis. Penectomy does not lead to improved survival, but may be pursued for refractory pain control. Patients often have features of secondary hyperparathyroidism and early control of serum calcium and phosphorus levels with medical optimization and hemodialysis may improve prognosis. Given the disease's rarity, clinical management is often individualized on a case-by-case basis.

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Effect of Parenteral Nutrition and Albumin in oxygen escalation/de-escalation in SARS-CoV-2 infected patients who are pre-intubation.

Background: The symptoms of severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) generally include diarrhea, loss of appetite, loss of taste and smell, dyspnea, and increased supplemental oxygen requirements, along with the usual viral symptoms of malaise and myalgias. Given the potential extensive nature of gastrointestinal manifestations of this viral syndrome, it became imperative to further analyze the role nutrition may play in the progression of the disease state. The objective of this study was to determine if intravenous parenteral nutrition (PN) affected the risk of intubation in SARS-CoV-2 patients who are dependent on non-invasive ventilation, specifically CPAP or BiPAP. This was the first study to investigate the role of nutrition in patients with severe SARS-CoV-2 infection.

Methods: Retrospective, multicenter case-control study which analyzed oxygen requirements for 1974 adults with SARS-CoV-2, who were admitted to the New York City Health and Hospitals system between the dates of March 1 and May 17, 2020 at the height of the first surge of the SARS-CoV-2 pandemic. Inclusion criteria for the study subjects were patients above the age of 18, admitted for SARS-CoV-2 infection, and required CPAP or BiPAP during their admission. Pediatric patients and those who were terminally ill or required hospice care were excluded from the study. The exposure of interest is intravenous parenteral nutrition. Relevant baseline inflammatory and nutritional biomarkers were studied as variables of interest. The main outcome was an escalation or de-escalation of oxygen requirements for all study patients over 5 days. Secondary outcomes were serology values during the study period.

Analysis: Out of 1974 patients, 111 patients received PN while on CPAP/BiPAP. In the PN and control groups, there was a significant change between Days 0-1 of oxygen requirements, suggesting within 24 hours after initiation on CPAP/BiPAP is suggestive for escalation or de-escalation of oxygen requirements. Day 0 albumin level was the only predictive marker for oxygen escalation in both the PN group ($p<0.001$) and the control group ($p<0.001$). Less remarkably, creatinine predicted escalation versus de-escalation of oxygen requirements in the PN group ($p = 0.03$) only.

Discussion: Initiating intravenous parenteral nutrition in the setting of non-invasive ventilation of SARS-CoV-2 infected patients was significantly associated with a decrease in oxygen requirements over the 24 hours after initiation. However, there was no significant difference in overall oxygen trends in the control group. Day 0 serum albumin level was predictive for oxygen escalation/de-escalation with marked improvement noted in patients who received parenteral nutrition. Ensuring nutritional needs are met for SARS-CoV-2 infected pre-intubated patients is indicated as it does not exacerbate oxygen requirements.

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IMPACT OF PALLIATIVE CARE AND ITS ASSOCIATION WITH END-STAGE HEART FAILURE READMISSIONS

Introduction: In the US, there are about 6.2 million adults living with heart failure (HF). As HF becomes more advanced or end-stage, patients tend to have frequent hospitalizations for inadequately managed symptoms with a 6-month readmission rate as high as 55%. Palliative care can be used alongside curative treatments and has been shown to improve patient satisfaction and quality of life. In this study, we evaluated the effect of palliative care encounters on readmissions in end-stage HF.

Methods: We analyzed the most recent 2018 National Readmission Database (NRD) to identify adult hospitalizations with a diagnosis of end-stage HF and a secondary diagnosis of palliative care encounter using appropriate ICD-10 CM codes. NRD is the largest publicly available all-payer readmission database in the United States, containing nearly 17 million unweighted discharges and representing roughly 36 million discharges each year. We excluded elective admissions and traumatic readmissions. Cox's proportional hazards model was used to identify predictors utilizing time to event information. We generated Kaplan-Meier curves that provide unadjusted survival estimates at post-discharge points in time. STATA 16.1 is used for all analysis.

Results: We identified a total of 25,695 end-stage HF index hospitalizations. Among patients discharged alive at the end of index hospitalization, 3,824 (17.2%) were readmitted within 30 days post-discharge. After adjusting for multiple covariates (age, gender, atrial fibrillation, CKD/ESRD, CAD, hypertension, diabetes mellitus, anemia), index hospitalizations with palliative encounter were associated with a lower hazard of 30-day readmission [aHR 0.49, 95% CI 0.42 â€“ 0.57, p<0.01]. Compared to index hospitalizations without a coexisting palliative care encounter, those with palliative care encounter have a lower length of stay (9.8 days vs 10.4 days, p=0.16) and fewer hospitalization costs (the US $ 28,376 vs $ 38,836 p<0.01). The three most common reasons for all-cause readmission were â€œhypertensive heart and chronic kidney disease with heart failureâ€, â€œacute on chronic systolic (congestive) heart failureâ€ and â€œsepsis, unspecified organismâ€.

Conclusion: In summary, our study demonstrates that palliative care team involvement is independently associated with decreasing the rehospitalizations in end-stage HF patients. It also reduces resource utilization. However, the LOS difference was not statistically significant. A multi-dimensional approach (involving palliative care specialists for early identification, effective counselling and symptom management) may be helpful to prevent rehospitalizations of end-stage HF patients.

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ONCOLOGY ON-CALL SERVICE UTILIZATION DURING THE COVID-19 PANDEMIC

Purpose

Ambulatory hematology/oncology practices often utilize an on-call service to provide essential continuity of care for cancer patients after office hours. Oncology fellows in academic practices typically staff this service, as it is a valuable educational tool to manage both emergent and non-emergent issues. During the ongoing COVID-19 pandemic, on-call services have been essential as practices rely more on telehealth, yet there is a lack of literature characterizing the on-call care delivery model, particularly during the pandemic. The purpose of this study is to evaluate the utilization of on-call service and to identify areas for improvement in patient safety and quality of care at the oncology outpatient cancer center at our institution, which experienced the first cases during the initial peak of COVID-19 in NY.

Methods

This is a single-center, retrospective analysis of after-hours calls received by oncology practice over 20 weeks from January to May 2020, including the timing of the initial peak of COVID-19 in NY from March-May. Patient calls were classified as being urgent, requiring immediate attention, or non-urgent, which could be addressed during regular hours. Data were summarized using descriptive statistics, continuous and categorical variables were compared using Wilcoxon rank-sum test and Fisher's exact test, respectively. Multivariate analyses were estimated by logistic regression using the penalized maximum likelihood estimation method.

Summary

We characterized 236 after-hours calls encompassing 176 sequential patients with either cancer or a benign hematologic condition, with 65% female patients and a median age of 68 (range: 25-87). Of the after-hours calls, 185 (78.4%) were deemed urgent, among which 139 (75%) were symptom-related. 202 calls (85%) were made by patients with a primary malignancy, among which 164 (81%) of them were urgent, with a majority symptom-related (82%). Of these urgent calls, 44 (27%) resulted in admission within 24 hours compared to non-urgent calls ($P<0.0001$). Patients with stage 4 cancers (42%) or hematologic malignancies (28%) were more likely to use the on-call service. There was no difference in the number of admissions prior to or after the peak of the COVID-19 pandemic in New York City ($P=0.49$). There was also no significant relationship between call urgency and oncologic treatment regimen ($P=0.06$). In a multivariable model, advanced age [OR=1.03(CI 1.0-1.07)] and urgent calls [OR=33.1(CI 2.7-401.0)] were independently associated with the risk of hospitalization.

Statement

In this retrospective study of on-call service utilization, most calls were both urgent and symptom-related, supporting the importance of the service particularly during the COVID-19 pandemic. A significant correlation was identified between calls urgency and advanced disease, namely, stage 4 carcinoma and hematologic malignancy. These data highlight the complexity of after-hours calls and serve as the foundation to develop strategies to prevent hospitalizations in populations at higher risk for hospitalization.

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Hospital in Crisis: Collaboration and Innovation Amidst the COVID-19 Pandemic

During the early months of the COVID-19 pandemic, NYU Langone Hospital â€“ Long Island implemented innovative engineering methods and capital management strategies to increase bed capacity and oxygen supply while maintaining a necessary level of quality in patient care. At the peak of the pandemic 96% of the patient population was COVID-19 positive and even with a strain in staffing and resources NYU Langone Hospital â€“ Long Island was still able to meet Governor Cuomo's New York State hospital mandate and expand patient capacity by 50%.

Collaboration and constant communication between various sectors of the hospital such as real estate development, infection prevention, and operations enabled an unprecedented overhaul of its facilities. 100% of inpatient rooms were converted to negative pressure rooms, a neighboring conference center was outfitted as an auxiliary Intensive Care Unit (ICU) for 13 patients, and the Emergency Department (ED) was expanded into two tents in the hospital parking lot for 40 days. In addition, the postpartum mother-baby unit was moved to an ambulatory care center which was retrofitted with at least 10 postpartum private rooms, all with negative pressure systems. The transformation of multiple spaces needed the input of numerous departments including, but not limited to, Real Estate Development and Facilities, Infection Prevention, Clinical Engineering, MCIT and Hospital Operations. Contractors were rapidly hired and worked on-site 24 hours a day to respond to the needs of the rapidly changing healthcare landscape. In addition, the patient oxygen demand increased almost ten-fold from 45 patients before the pandemic to over 400 patients at its peak. This increase in oxygen demand led to frozen output pipes from the oxygen farm, threatening to reduce or stop the flow of oxygen to patients. The hospital engineering department found a solution to this novel problem by installing an additional oxygen farm, relieving the original from the high quantity endothermic reactions that were causing the pipes to freeze.

We will take an in-depth view on the inter-departmental collaboration and innovation that helped NYU Langone Hospital â€“ Long Island meet COVID-19 related challenges in hopes to understand how the hospital can be better prepared to respond to similar crises in the future.

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Improving implantable cardioverter defibrillator deactivation discussions in hospitalized comfort care patients

Background: Inadvertent implantable cardioverter defibrillator (ICD) shocks at the end of life are distressing and should be avoided. A large portion of ICDs remain active in patients with 'comfort care' orders. We previously demonstrated that standardized teaching sessions paired with a novel electronic medical record (EMR) decision tool improved the frequency of ICD deactivation discussions in comfort care patients. We investigated whether an effective EMR change alone can invoke more frequent ICD deactivation discussions.

Methods: We implemented a novel decision tool in the EMR at another campus within our hospital system aimed at improving documentation of discussion and deactivation of ICDs at the end of life. No education sessions or announcements were made of the change to the EMR. The rates of discussion and deactivation were compared between the retrospective data from 6 months prior to intervention versus the 6 months after implementation of the novel decision support tool. To compare pre- and post-intervention results, Fisher's exact test was performed and a type I error cutoff of 0.05 for the primary outcome.

Results: After the EMR decision tool was implemented, the rates of documented discussions regarding ICD deactivation improved from 77% to 96% (p=0.06). The rate of deactivated ICDs improved from 39% to 75% (p=0.02).

Conclusion: Strategically implemented EMR changes are effective ways to increase awareness, discussion and deactivation of ICDs in comfort care patients.

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AN INNOVATIVE APPROACH TO FOOD INSECURITY IN MEDICAL RESIDENT CLINICS

Background: Food insecurity is a frequently encountered challenge in outpatient clinics, and can directly impact patient wellness, healthcare compliance, and healthcare delivery. The city of Rochester, NY has a food insecurity rate of 25.9%, whereas 10.5% of US citizens were food insecure in 2019. Purpose: The first aim of our study was to better understand patient needs and awareness of local resources. The second aim of this study was to develop a tool within the electronic medical record to screen for food insecurity and provide resources during clinic visits. Methods: For our first aim we performed a needs-based qualitative assessment through semi-structured telephone interviews with patients in our outpatient internal medicine residency clinic (N=13). Interviews were reviewed using thematic analysis. For our second aim, we created a tool in our electronic medical record that provides data on the prevalence of food insecurity and prompts providers to share resources. Resource options include an on-site food pantry for emergency food, list of local food banks, and social work referral. These resources will be directly available on the after-visit summary for each food-insecure patient. Summary of results: Many patients normalized food insecurity and did not identify it as a significant problem until directly questioned. When asked about difficulty making food last between paychecks, one patient commented”diet if the food does not last.â€ Another stated” make sure my boys eat. Sometimes I go without food, but it doesn’t bother me.â€ Affected patients frequently reported running out of food and food stamps by the end of the month. Out of the 13 patients surveyed, 7 stated that they purchase food only once per month. One person stated this is because they buy food using food stamps, which are distributed monthly. These findings underscore the need to identify patients who face food insecurity through routine screening. In order to address lack of access to healthy food in our patient population, we developed an accessible food pantry within our residency clinic. We are currently screening patients in our clinic and providing them with emergency food and contact information for local food shelters. Conclusion: Food insecurity is highly prevalent in our primary care clinic, and patients appreciate the provision of food and resources. Future directions for this project include working with local food banks to arrange a sustainable food supply for the pantry and assessing metrics of physical health in food insecure patients. By providing our affected patients reliable access to healthy food, we aim to address one of the many barriers to patient adherence to physician dietary recommendations. We hope this in-clinic food pantry can be adopted in outpatient primary care and resident clinics throughout the country as an effective approach to food insecurity.