Ohio Gastroenterology Society
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Scientific Poster Abstracts

#1

Emily Buerschen, DO, MS
Case Study
PGY1: Wright State University

Pancreatogenic Diabetes Mellitus precipitating Diabetic Ketoacidosis: Case Report and Literature Review

While Diabetes Mellitus types 1 and 2 are common, there is a rare subtype of diabetes classified as Diabetes Mellitus type 3c, by which diabetes is caused by diseases of the pancreas. The pathophysiology of this disease involves inflammation of the pancreas leading to destruction of the endocrine pancreatic cells, particularly the beta cells, interrupting their ability to produce insulin and regulate blood glucose levels. Chronic pancreatitis is the primary disease process responsible for the development of type 3c diabetes, which accounts for less than 2% of diabetic cases in the United States. However, a growing body of evidence suggests that misdiagnosis accounts for a large underestimation of prevalence. Additionally, it is exceedingly uncommon for type 3c diabetes to precipitate OKA, with few reported cases internationally. We present a case of a 36-year old-male who presented to the emergency department in January 2022 with OKA secondary to pancreatogenic type 3c diabetes mellitus.

The patient had a strong history of alcohol use disorder which resulted in multiple prior admissions for acute pancreatitis and eventual diagnosis of chronic pancreatitis in November 2019 by gastroenterology. He had no history of hyperglycemia on previous hospitalizations or outpatient office visits, and had a HbA1c of 5.6 in February 2020. His lab values on admission in 2022 revealed hyperglycemia of 636 and HbA1C of 14.7. He had beta hydroxybutyrate in his blood, and acidosis on blood gas. MRI imaging of the abdomen showed edematous changes about the pancreatic head and neck. He was admitted to the intensive care unit and received IV fluids, insulin and electrolyte replacement.

After his anion gap closed and blood glucose was controlled, he was transitioned to subcutaneous insulin and discharged on a home regimen. Antibody testing for type 1 diabetes was unremarkable in outpatient follow-up. We evaluate our patient's case and discuss literature review on the underdiagnosis of type 3c diabetes due to pancreatitis and the clinical utility in improving diagnostic criteria to better treat patients.

#2
Akash Khurana, MD
Case Study
PGY2: University Hospitals Cleveland Medical Center

A Case of Blue Rubber Bleb Nevus Syndrome in an Elderly Patient

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Purpose of the Study

Blue Rubber Bleb Nevus Syndrome (BRBNS) is an uncommon disorder with only about 200 cases reported worldwide. It is defined by the formation of soft rubbery venous blebs that mostly involve the skin, gastrointestinal (GI) tract, central nervous system, spleen and other visceral organs. BRBNS is mostly diagnosed in children with only 4% incidence noted in adult age groups. Herein we describe the case of the oldest reported individual newly diagnosed with BRBNS who was a 90 year-old lady presenting with small bowel bleeding.

Methods/Case Description

A 90-year-old woman with history of atrial fibrillation on apixaban presented to the emergency room with a few week history of melena. Vital signs were significant for tachycardia with a heart rate of 110 beats/min. Physical exam showed pale conjunctiva with no noted cutaneous lesions. Laboratory tests were significant for a hemoglobin of 7.2 g/dL down from a normal baseline (normal range 12-16 g/dL). Upper endoscopy showed non bleeding submucosal venous structures in the esophagus and duodenum. Colonoscopy showed coffee ground blood with no noted source of bleeding. Capsule endoscopy revealed numerous venous structures in the small bowel with active oozing in the jejunal loops suggestive of BRBNS. A single-balloon assisted deep enteroscopy was offered to attempt to control the bleeding however the patient preferred to avoid any further endoscopic or surgical interventions and chose to receive palliative care.

Results Summary/Conclusion

Most BRBNS cases are sporadic however inheritance through autosomal dominance fashion via TEK gene mutations have been reported in a minority of cases. GI involvement by BRBNS usually manifests as GI bleeding that can range from a chronic slow rate to a massive and life-threatening hemorrhage. Presentation with bowel volvulus, intussusception, infarction and gangrene have been reported. Direct examination through endoscopic visualization is the diagnostic and potentially therapeutic intervention of choice. Management depends on the initial presenting symptoms and extent of involved areas and include iron supplementation, blood transfusion and endoscopic control of bleeding. Surgical resection of affected bowel loops is reserved for complicated and refractory cases. Ongoing clinical trials evaluating the efficacy and safety of sirolimus, interferon-beta and octreotide are underway for the management of complex cases. Recurrence is common and no curative treatment is currently available.

#3
Shaina Ailawadi, BS
Case Study
MS4: Wright State Boonshoft School of Medicine

Doxycycline: A Culprit of Drug Induced Liver Injury

Introduction

Doxycycline is a commonly prescribed antibiotic, used in skin and soft tissue infections and in cases of susceptible pneumonias. A limited series of case reports have been implicated as doxycycline as the cause of cholestatic injury.

Case Presentation

A 30-year-old Caucasian female who was recently treated for a cat bite presented with abdominal pain and itching. Prior to presentation, she had been treated with a 10-day course of doxycycline. Seven days after the completion of the 10-day course of doxycycline, the patient started experiencing symptoms of nausea, diarrhea, and pale stools. Eleven days after completion of antibiotics (COA); the patient presented to the outpatient clinic with abdominal pain and pruritis. Physical exam was significant for jaundice, bilateral scleral icterus and pruritis. Diagnostic workup of abdominal pain included liver functioning enzymes (LFTs), autoimmune and hepatitis laboratory workup, ultrasound of right upper quadrant, computed tomography (CT) of abdomen and pelvis and liver biopsy. Autoimmune workup including anti-nuclear antibody, anti-mitochondrial antibody, and anti-alpha smooth muscle antibody was negative. Markers of acute Cytomegalovirus and Epstein-Barr virus as well as acute hepatitis panel were all negative. On presentation (11-days after COA), LFTs significant for hyperbilirubinemia of 4.0 and elevated AST/ALT of 44/102, RUQ CT was negative. Initial R-factor score was 1.2. 16 days after COA; LFTs continued to uptrend with hyperbilirubinemia of 5.6 (4.3d, 1.3i), elevated alkaline phosphatase (ALP) of 253, and elevated transaminases. 19 days after COA, there was up-trending hyperbilirubinemia to 7.2 (5.9d, 1.3i), elevated ALP of 285, and normal transaminases. Twenty-six days after COA, there was improved LFTs, down-trending hyperbilirubinemia to 6.9 (5.6d, 1.3i), continually elevated ALP of 278. 41 days after COA, liver biopsy showcased significant liver parenchyma displaying lobular cholestasis. Lastly, ninety-five days after COA, all laboratory abnormalities had resolved in addition to physical symptoms.

Discussion

Cholestatic liver injury is most commonly reported with Augmentin, Ciprofloxacin, and Sulfonylureas, but limited case reports have identified Doxycycline as the main entity of cholestatic injury. Proposed pathophysiological theory surrounds the inhibition of transport via hepatocytes, leading to cholestasis. Unfortunately, there are no clear biomarkers that suggest disease progression or remission. This case highlights the use of clinicians keeping a wide differential when considering drug-induced cholestatic injury.

#4
Shaman Dalal, MD
Case Study
PGY5: MetroHealth Medical Center at Case Western Reserve University

Rapid Sequence Induction-Intubation Facilitated Passage of Impacted Food in Esophagus: A Single Institutional Case Series

Purpose of study

Complete esophageal food impaction (EFI) if not relieved may progress to perforation. Existing literature does not support use of pharmacologic interventions alone and urgent endoscopic intervention is recommended to relieve the obstruction. We present a case-series of three EFI resolved without any endoscopic interventions after rapid sequence induction-intubation (RSII).

Case Description/Methods

Case 1: A 77-year-old man with history of EFI from "distal esophageal spasm" presented four days after the onset of symptoms suspicious for EFI. CT chest showed esophageal dilation and food debris up to level of the aortic arch.

Case 2: An 87-year-old man with history of EFI from a massive goiter presented three days after the onset of solid food dysphagia and inability to swallow saliva. Esophagogastroduodenoscopy (EGD) with moderate sedation showed EFI at distal esophagus which was not able to be manipulated further.

Case 3: A 65-year-old woman with history of chronic dysphagia and EFI relieved with glucagon in the past presented one day after the onset of severe dysphagia and inability to tolerate oral secretions.

Results Summary

All three patients underwent RSII using fentanyl and rocuronium with subsequent EGD. In the first two cases EGD did not reveal impacted food despite recent CT/endoscopic evidence of showing such. In the third case distal EFI was noted, but it was now able to be pushed into the stomach. All three patients had severe esophageal ulceration due to their EFI.

Conclusion

Esophageal foreign body impaction is the third leading cause of non-biliary gastrointestinal (GI) emergencies following upper and lower GI bleeding. Current guidelines recommend urgent EGD for complete EFI. Airway protection with intubation is recommended only for patients who are at increased risk of aspiration. All three of our patients presented with delayed EFI (more than 24 hours from symptom onset) and were thus at higher risk of perforation. RSII not only reduced risk of aspiration but also reduced need for endoscopic intervention and shortened sedation time. RSII involves rapid onset of deep sedation which is hypothesized to relax smooth muscle fibers in distal esophagus followed by paralysis which relaxes skeletal muscles fibers in the diaphragm and proximal esophagus allowing passage of impacted food. We propose RSII prior to EGD for patients presenting with delayed EFI to minimize need for prolonged endoscopic interventions, thus reducing risk of esophageal perforation.

#5

Arjun Chatterjee, MD
Research
PGY2: Cleveland Clinic Foundation

Risk of Clostridioides Difficile Infection In Patients With Celiac Disease: Insight From A U.S.-Based Population Study

Purpose

Little is known about the association between Clostridioides difficile infection (CDI) and celiac disease. The aim of the study is to describe the risk of CDI in patients with celiac disease and to describe the clinical outcomes in patients with celiac and CDI.

Methods

We queried a commercial database (Explorys IncTM, Cleveland, OH, United States), and obtained an aggregate of electronic health record data from 26 major integrated United States healthcare systems comprising 360 hospitals in the United States from 2017 to 2022. Diagnoses were organized into the Systematized Nomenclature of Medicine Clinical Terms (SNOMED–CT) hierarchy. We compared the incidence of new CDI among patients with celiac disease versus those without celiac disease (controls). Univariate and multivariate analyses were performed on the data, and associations were reported as odds ratios (OR) with 95% confidence intervals (CI).

Result Summary

We identified 90,060 patients with celiac disease and 25,807,720 controls.

Compared to patients who did not have celiac disease, those who were diagnosed with it, were more likely to be women, Caucasians, smokers, and had chronic medical conditions such as diabetes, obesity, or hypertension. The incidence of new CDI was 1.31% (1,180) in celiac disease patients, and 0.35% (92,330) in controls, yielding an odds ratio (OR) of 3.69 (95% CI 3.49-3.91; P< 0.0001).

For those who developed Clostridioides difficile infection, treatment and clinical outcomes were not significantly different. We compared treatment with metronidazole, vancomycin, and fidaxomicin. Clinical outcomes included colectomy performed within 60 days of CDI diagnosis (excluded patients with a history of IBD, ischemic colitis, and neoplasia of the colon).

We created a multivariate analysis model controlling for common CDI risk factors, including age ≥65 years, female gender, Caucasian race, prior antibiotics use, acid suppressive therapy, and inflammatory bowel disease. The model uncovered that celiac patients were more likely to develop CDI OR: 1.34 (95% CI: 1.2-1.4, P < 0.0001) compared to controls.

Conclusion

In a large US population-based study, patients with celiac disease had a significantly higher incidence of CDI than controls. Clinical outcomes were similar between the groups. Clinicians should be vigilant and consider CDI in celiac patients with new or recurrent diarrhea.

#6
Arjun Chatterjee, MD
Case Study
PGY2: Cleveland Clinic Foundation

Synchronous Pancreatic Masses

Introduction

Any mass lesion in the pancreas typically raises concern of undiagnosed pancreatic malignancy. Presence of synchronous multiple pancreatic masses is a rare finding. In this case series, patients presented with two or more synchronous solid masses as a result of pancreatic cancer (PC), autoimmune pancreatitis (AIP), and sarcoidosis.

Case Description

Case1:
65-year-old female presented with abdominal pain and 20lbs unintentional weight loss over 4 months. CT scan revealed two suspicious solid masses in the body/tail of the pancreas. IgG4 level was normal, but CA19-9 was elevated at 75u/mL. EUS with individual fine needle biopsies (FNB) of both masses confirmed infiltrative PC. Due to the significant cardiac history, the patient was deemed not a surgical candidate and was referred to oncology for chemoradiation/palliative therapy.

Case2:
76-year-old male presented to the hospital with postprandial abdominal discomfort and unintentional weight loss. CT Abdomen demonstrated localized inflammation in the pancreatic tail. EUS showed mass-like lesions in the pancreatic head and tail. Immunohistochemistry was positive for IgG4-positive plasma cells. He was diagnosed with AIP and was started on steroids.

Case3:
54-year-old male with complicated sarcoidosis (pulmonary/extrapulmonary involvement), presented with an abnormal PET scan showing focal increased uptake in the head/tail of the pancreas. His CT scan did not show any mass or duct dilation. EUS demonstrated ill-defined, infiltrative masses involving the pancreatic head and the tail. FNB showed scattered non-necrotizing granulomas. After excluding other causes of granulomatous diseases, he was diagnosed with pancreatic sarcoidosis.

Conclusion

Only a few examples of synchronous pancreatic masses have been recorded in the medical literature. Our case series includes three distinct pancreatic diseases that result in multiple mass lesions with similar appearance on imaging. The clinical course for all of the patients differed greatly depending on the pathology. The plurality of solid masses and comparable imaging features of each with PC, which is the 4th highest cause of cancer-related deaths in the United States is the highlight of this series. When encountering such individuals, a broad differential should be examined, as the clinical history of the illness varies. The whole pancreas should be investigated with multimodal imaging and EUS-guided acquisition histopathology to reach a clear diagnosis.

#7
Sarah Grebennikov, DO
Case Study
PGY2: OhioHealth Riverside Methodist Hospital

Secondary linitis plastica of the colon due to breast cancer metastasis mimicking inflammatory bowel disease

Breast cancer is the second most common cancer in the US and the second leading cause of cancer related deaths. Breast cancer most commonly metastasizes to the bone, lung, liver, and brain, but rarely to the GI tract. We report a case of primary breast cancer with diffuse metastasis to the colon.

67-year-old female with history of collagenous colitis was diagnosed with stage IIIA (T3, N2, M0) invasive lobular carcinoma (ILC) ER+/PR+/Her2+ of the left breast identified on screening mammogram. She initially underwent neoadjuvant chemotherapy and anti-HER-2/neu therapy followed by left modified radical mastectomy with lymph nodes positive for metastasis 8 months after initiating therapy. She also completed radiation to left chest wall. Two years later, she underwent prophylactic contralateral mastectomy with incidental finding of right breast cancer with unknown stage ER+/PR-/Her2-. Three years after diagnosis, she had a colonoscopy for early satiety and abdominal discomfort. Prior colonoscopy 2.5 years ago only showed diverticulosis, however this colonoscopy revealed diffuse congestion, erythema, induration, and ulceration (A) with stenotic ileocecal valve (B) concerning for inflammatory bowel disease (IBD). Multiple polyps were found in the cecum, descending, sigmoid and distal rectum. Forceps biopsies of all colonic segments and polypectomies demonstrated poorly differentiated adenocarcinoma (C). Staining matched breast cancer primary (ER+, PR-, HER2-; CK7 and GATA3+). CT showed abdominal lymphadenopathy and osteoblastic metastatic disease. Treatment was switched from Exemestane to Xeloda and Zometa was started for bone metastasis. At 15 months of follow up, she is tolerating therapy well with radiographic resolution of metastatic disease.

Breast cancer rarely metastasizes to the GI tract (4.5%), the stomach being most commonly affected. Lobular subtype is more frequently implicated than ductular. Colonic involvement is rare and can mimic primary colon cancer and IBD. The latency period between initial diagnosis of breast cancer and discovery of colonic metastasis is variable and can occur up to 30 years after. Patients may present with bowel obstruction, or non-specific symptoms such as abdominal pain, diarrhea, and weight loss. This case illustrates that breast cancer metastasis to the colon can present with symptoms mimicking IBD and rarely causes secondary linitis plastica, which to our knowledge has never been reported involving the entire colon.

#8

Stephen Sinclair, III, DO
Case Study
PGY3: Mount Carmel Grove City

Endoscopic Ultrasound in the Diagnosis of Rectal Adenocarcinoma in a Recurrent Polyp

Colonoscopy remains an effective modality for treatment of large polyps. Post-polypectomy surveillance is critical in evaluating for recurrence. The role of rectal endoscopic ultrasound (EUS) in post-polypectomy care remains unclear. In this case, we present a clinical scenario where rectal EUS was impactful.

A 50-year-old woman without a family history of colorectal cancer presented with a positive multitarget stool DNA test. Three months later, colonoscopy revealed a benign appearing 40mm rectosigmoid sessile polyp (A). Piecemeal polypectomy using hot snare over saline pillow was performed and the site was tattooed. Pathology showed a tubulovillous adenoma. She was then referred for a surveillance sigmoidoscopy.

Three months later, a recurrent 35mm sessile polyp was encountered at the previous tattoo site. The polyp was resected in a piecemeal fashion using saline injection lift with hot snare and hot biopsy avulsion. The polyp was difficult to remove due to the infiltrating tattoo and scarring from prior polypectomy. Pathology showed a villous adenoma.

Four months later, surveillance sigmoidoscopy revealed another recurrent 20mm polyp. Rectal EUS during the same session showed a 19mm x 10mm heterogeneous lesion with focal invasion into the muscularis propria (B). It was removed using saline injection lift, piecemeal resection with hot snare and cold forceps, and then ablated with argon plasma coagulation. Pathology again showed villous adenoma. Given the EUS findings, she was referred to surgical oncology. CT chest/abdomen/pelvis was negative for a mass and metastatic disease. CEA was only 0.99ng/mL. She then underwent lower anterior resection. Final pathology revealed well differentiated adenocarcinoma pT2 pN0 without lymph node metastasis. Surveillance colonoscopy less than a year later did not reveal any recurrent disease.

Recurrence following piecemeal resection of sessile polyps is seen in up to 50% of patients in some studies. However, multiple recurrences are uncommon and warrant further investigation. Rectal EUS has been studied once previously for post resection of high-risk polyps and found to have only a slight incremental yield over white light endoscopy in the detection of cancer. In our case, rectal EUS did suggest underlying malignancy, which was confirmed on final surgical pathology. EUS in recurrent polyps is not well studied in the literature but may be a useful tool for the detection of underlying masses in these scenarios.

#9

Stephen Sinclair, III, DO
Case Study
PGY3: Mount Carmel Grove City

A Classic Case of Black Esophagus

Acute esophageal necrosis (AEN) is a rare syndrome also known as black esophagus. Aptly named, it is described as a circumferential, diffuse, black appearing esophageal mucosal lesion affecting variable lengths of the esophagus. Classically, the discoloration ends sharply at the gastroesophageal junction.

A 50-year-old woman presented to the emergency department via ambulance for altered mental status. She had undergone 2 renal transplantations and was on chronic immunosuppression. She was intubated and treated for septic shock. CT scan demonstrated ureteral obstruction of her lone functioning transplant kidney with pyelonephritis and severe gastric distention suggestive of outlet obstruction. Nephrostomy tube was placed, and the patient was admitted to the critical care unit. Two days later, significant amount of coffee ground enteric contents was noted via nasogastric tube. Gastroenterology was consulted and twice daily intravenous proton pump inhibitor (PPI) was started. Urgent esophagogastroduodenoscopy was performed. Severe, circumferential black esophagitis was seen without ulceration. Intravenous PPI therapy and supportive care was continued. The patient was discharged 8 days from admission in stable condition with persisting odynophagia.

This case represents the classical, two-insult presentation of AEN: septic shock and gastric outlet obstruction. Once diagnosis is established, careful surveillance is required. However, there are no established guidelines for surveillance. The most important and life-threatening complication is perforation and should be suspected if rapid clinical worsening is seen. Per expert opinion, PPI therapy should be transitioned to oral therapy once improvement is noted and continued until repeat endoscopy in approximately 8 weeks.

As of 2006, there were 88 cases documented in medical literature. AEN is thought to require two insults due to the significant collateral and segmental blood supply of the esophagus. First, global hypoperfusion is expected. Second, profound mucosal injury from reflux of gastric contents. Treatment includes managing the underlying medical conditions, supportive care, and PPI therapy. Complications following AEN are strictures, abscesses, and perforation. Associated mortality is approximately 30%. This is likely due to the underlying medical conditions that cause AEN. Awareness and understanding of the condition and its complications is important to manage and surveil survivors appropriately.

#10
Sara Kamionkowski, DO
Research
PGY4: MetroHealth Medical Center

Chronic Proton Pump Inhibitor Use is Not Associated with COVID-19 Infection or Disease Severity

Introduction

Proton pump inhibitors (PPIs) are well-tolerated antisecretory agents used to treat acid-peptic disorders, but chronic use has been associated with increased risk of gastrointestinal (GI) infections. Novel coronavirus is a respiratory illness that causes COVID-19, but has also been shown to infect the GI tract. Recent work has supported an association between COVID-19 and PPI use. Our study aimed to validate the association between PPI use and increased risk of COVID-19 and to investigate the severity of infection in these patients.

Methods

Patients from a large community hospital aged 18 and older with a positive COVID-19 test (cases) (n=299) were compared with those who tested negative (controls) (n=601). Age, gender, race, BMI, history of tobacco or alcohol use, and certain comorbidities (diabetes mellitus, asthma, chronic obstructive pulmonary disease, cirrhosis, chronic kidney disease, and malignancy) were matched using propensity score matching (PSM) to minimize confounding variables. The rate of positive COVID-19 tests versus negative COVID-19 tests was compared among those using only chronic PPI (greater than three months), only H2-receptor antagonist use (H2RA), and combination therapy of PPI and H2RA. Subgroup analysis was also performed among positive COVID-19 cases to assess the rate of hospitalization, intensive care unit needs, ventilator dependence, and death.

Results

Chronic PPI use showed no increased risk of COVID-19 (OR 0.42, 95% CI 0.3384-0.5096, p=0.0805). H2RA therapy as well as combination therapy also did not have an increased risk of testing positive for COVID-19 (OR 0.37, 95% CI 0.2445-05170, p=0.0823 and OR 0.55, 95% CI 0.3807-0.7151, p=0.5455, respectively). Among patients with COVID-19 who took PPI and/or H2RA, 14.46% were hospitalized, 16.67% required mechanical ventilation, 41.67% required intensive care, and there was 8.33% mortality. Patients on PPI and/or H2RA therapy were not more likely to be hospitalized, require mechanical ventilation or intensive care, or have increased risk of mortality compared with those who did not take either medication (p=0.6813, p=0.3679, p=0.6703, p=0.0654).

Discussion

Chronic PPI use (with or without H2RA use) does not increase the risk of COVID -19. Patients who did test positive for COVID-19 while on chronic PPI were not more likely to be hospitalized and did not require higher levels of care. PPIs should continue to be used in the proper patients regardless if they are positive for COVID-19.

#11
Ayushi Jain, MD
Research
PGY3: The Ohio State University Wexner Medical Center

Impact of Social Vulnerability Index on Outcomes in Patients with Alcohol Related Liver Disease

Purpose of the study

Alcohol related liver disease affects diverse communities with individual and social characteristics that can impact outcomes. The Social Vulnerability Index (SVI) integrates a range of metrics and assigns a score between 0 and 1, where higher scores represent an increased risk of social vulnerability. Vulnerable patients with alcohol related liver disease have been reported to have worse outcomes. We sought to assess the impact of SVI on outcomes of patients hospitalized with alcohol related liver disease with access to social support services.

Methods

Hospitalizations for alcohol related liver disease at our institution between March and August 2019 were reviewed. All patients were assigned a low or high SVI score based on their residential census tract. Per our standard practice, patients were screened by multi-disciplinary care coordinators to identify needs for rehabilitation counseling, transplant workup, and care coordination after discharge. Demographics, hepatic decompensation, critical care needs, readmission and mortality were compared.

Results Summary

Among 73 patients admitted for alcoholic hepatitis, 32 had a low SVI (mean 0.25) and 42 had a high SVI (mean 0.72). African American patients were more likely to have a higher SVI (35% vs 0%, p=<0.001). Severity of alcohol hepatitis based on discriminant factor (DF) was similar between high and low SVI patients (mean DF 39.6 vs 42.8, p=0.72). After controlling for race, there was not a significant difference in hepatic decompensation, critical care needs, readmission rate or mortality based on SVI. There were 393 patients admitted for alcoholic cirrhosis including 166 with a low SVI (mean 0.26) and 227 with a high SVI (mean 0.73). Patients that were African American (23.6% vs 5.5%, p=<0.001) or disabled (41.4% vs 29.5%, p=0.008) had a higher SVI. MELD-Na scores were similar between the high and low SVI patients (mean MELD-Na 21.7 vs 22.9, p=0.47). After controlling for age, race and employment, there was not a significant difference in hepatic decompensation, critical care needs, readmission rate or mortality based on SVI.

Conclusion

Most patients admitted for alcohol related liver disease had a high SVI; however, SVI did not impact outcomes in our cohort of patients. This may be a result of extensive care coordination efforts at our institution aimed at reducing barriers for vulnerable patients. These early interventions likely decrease the effect of SVI on outcomes.

#13
Julie Gartland, MD
Case Study
PGY2: University Hospitals Cleveland Medical Center

Embolization of Peristomal Variceal Bleeding

Introduction

Five percent of all variceal bleeding occur at ectopic sites outside the typical gastroesophageal region. Peristomal varices (PSV) are a potential ectopic site in patients with both portal hypertension (PH) and a surgical stoma. We present a case of a patient who had both PH and an ostomy complicated by PSV bleeding successfully treated with IR guided gel foam embolization and microvascular plug.

Case

Our patient was a 60-year-old male with a history of left colectomy with end colostomy and partial right hepatectomy secondary to metastatic colon cancer, non-cirrhotic PH due to chronic diffuse thrombosis, previous bleeding esophageal and gastric varices managed with coil embolization who presented with two days of peristomal bleeding. CT imaging identified PSV in addition to confirming chronic portal, splenic, and superior mesenteric veins thrombi (figure 1). Due to significant thrombus burden the patient was not a candidate for TIPS or liver transplant. Peristomal varices were successfully managed with IR guided gel-foam embolization and microvascular plug (figure 2). Patient has not had PSV bleeding in the six months after the procedure.

Conclusion

Peristomal variceal bleeding due to PH is rare but with mortality rates as high as 40%, however, clear guidelines for management of PSV bleeding have yet to be established. Treatment options for PSVs include both medical management with octreotide drips or beta blockers, local interventions with sclerotherapy, embolization, or cases of EUS guided management, and surgical interventions including TIPS, BRTO, or liver transplant. Recurrence rate of PSV bleeding is 20% after TIPS versus 45% after embolization and nearly 85% with non-operative treatment. Our patient demonstrated a unique scenario where TIPS, surgical shunting, and liver transplant were not viable options due to chronic thrombus burden. We demonstrated short-term efficacy with IR embolization, but further investigation is needed to validate this management in addition to investigation of EUS-guided embolization for bleeding PSVs.

#14
Amandeep Singh, MD
Research
PGY7: Cleveland Clinic Foundation

Associations of Idiopathic Pancreatitis in Patients with Fatty Pancreas

Purpose of the study

Idiopathic pancreatitis (IP) constitutes about 30.0% of all acute pancreatitis (AP) cases. Patients with fatty pancreas could be at high risk of developing pancreatitis. We aimed to assess the associations of IP in patients with FP.

Methods

Based on the magnetic resonance imaging (MRI) all patients (≥18 years) with presumed diagnosis of FP were identified between January 2000 till May 2020. Patients were excluded if they were <18, had acute pancreatitis (AP) ≥30 days before diagnosis of FP, had cystic fibrosis, were on steroids or antivirals for ≥3 months and had excess alcohol use. Fat content was measured as segments with head, body and tail being individual segments. Baseline demographics, medications and co-morbidities were collected. Patients were prospectively followed to assess for development of pancreatitis. Univariate analysis was performed to assess associations of IP in patients with FP.

Results

Out of 1,956 with FP on MRIs 479 were included in the final analysis. Mean age of our cohort was 64.8 ± 13.9 years, 60.0% were females and Caucasian (86.0%) were the major race. About 42.0% were smokers and 47.6% were obese with mean BMI of 32.6 ± 7.3. HTN was present in 63.0%, HLD in 53.7%, 43.6% had fatty liver, 31.7%, had diabetes, 17.7% had CKD in 17.7% and 17.5% had CAD. Sixty three percent were on anti-hypertensives, 49.9% on statins, 4.8% on fibrates, 24.2% on oral hypoglycemics and 17.1% were on insulin therapy. 47.2 % had generalized fat in pancreas, 41.7% had fat mainly in one segment and 11.1% had fat in 2 segments. During a mean follow-up period of 3.9±3.4 years after the diagnosis of FP, 7.9% developed AP with 57.8% being idiopathic pancreatitis. On univariate analysis, compared to patients without IP, patients IP had significantly higher percentage of fatty liver (42.7% vs. 63.6%), diabetes (30.4% vs. 59.1%) and h/o cholecystectomy (CCY) (16.4% vs. 40.9%) ($p<0.05$ for all), and they were more likely to be oral hypoglycemics (23.2% vs. 45.5%), insulin (16.0% vs. 40.9%), statins (48.8% vs. 72.7%) and on pancreatic enzyme supplements (6.6% vs. 31.8%). There was no difference in fat distribution amongst patients with and without IP.

Conclusions

In FP patients who developed AP, 58.0% had IP. Compared to patients without IP, FP patients with IP have significantly higher chances of having fatty liver, diabetes and prior CCY; and they are more likely to be on oral hypoglycemics, insulin, statin and pancreatic enzyme supplements. Future prospective studies are required to confirm these findings.

#15
Amelia St. Ange, MD
Case Study
PGY2: Mercy Health – The Jewish Hospital

A Case of Salmonella Peritonitis

Introduction

Salmonella species are gram-negative and facultatively anaerobic bacilli. Salmonella infection is not common in the United States of America. Most common forms of infections are usually self-limited and uncomplicated gastroenteritis. Infections can be differentiated into typhoidal and non-typhoidal where, usually, typhoidal type causes an enteric fever and tends to be prevalent in travelers to endemic regions where as, the non-typhoidal type is contracted feco-orally from contaminated food or water. Systemic related infections from Salmonella can be usually seen in children or immunocompromised adults. Spontaneous bacterial peritonitis is an infection of the ascitic fluid where there no evidence of an intra-abdominal surgically treated source3. Cases of Salmonella peritonitis have been rare throughout the literature. Confirmation of spontaneous bacterial peritonitis is with ascitic fluid absolute polymorphonuclear cells more than or equal to 250 cells/mm3 and a culture positive for Salmonella sp.

Case presentation

A 45-year-old male with a past medical history of renal transplant, now ESRD on hemodialysis for 2 years, hypertension and splenectomy. He presented to the emergency department for altered mental status. He was noted to be fluid overloaded with a mildly distended and tender abdomen. Labs revealed glucose; 49 mg/dL, BUN: 166 mg/dL, hemoglobin of 6.3 g/dL and urinalysis consistent of a urinary tract infection. He was admitted for sepsis likely due to urinary tract infection, volume overload and malnutrition. Patient was intubated due to persistent hypoxia along with multifocal pulmonary infiltrates and was placed on dialysis. After day 1 of hospitalization, he eventually become increasingly distended with abdominal pain. CT abdomen showed a very large fluid collection with rim enhancement. IR was consulted to drain the abdominal fluid due to areas of loculation present. Ascitic fluid sent for analysis via paracentesis revealed the presence of bacterial peritonitis. During that period, urine culture returned with an unusual report of Salmonella species. Antibiotic regimen was de-escalated to ciprofloxacin. He started experiencing recurrence of distension with an ileus and underwent another paracentesis. Ascitic fluid culture was positive for Salmonella. Species identification revealed Salmonella from the urine and ascitic fluid were the same and non-typhi. Patient subsequently developed loculations in the abdomen requiring a pig-tail drain. though overall, improvement in abdominal pain and distension. With antibiotic management and continued ultrafiltration, clinical status improved. He was then transitioned to a skilled nursing facility for rehabilitation.

#16
Elizabeth Auckley, BA
Research
MS4: The Ohio State University College of Medicine

Restrictive Eating Disorder Prevalence as comorbid disease in Patients Presenting to a Tertiary Care Gastroenterology Motility Clinic

Introduction

Complaints of gastrointestinal (GI) symptoms, such as postprandial fullness, abdominal distention, abdominal pain, gastric distension, early satiety, constipation, vomiting, flatulence, decreased appetite, borborygmi, and nausea, are frequent among patient with eating disorders, including anorexia nervosa and bulimia nervosa. In addition, there is a significant correlation between GI symptoms and hypochondriasis. Despite potential overlap of eating disorders and gastrointestinal disorders, it is unknown how many of these patients have restrictive eating habits and hence may benefit from further therapy including counseling by a specialist in eating disorders. The purpose of this study is to investigate the prevalence of restrictive eating habits in the patients seen at the Ohio State University Gastroenterology clinic by conducting a retrospective review of the electronic medical records of patients in clinic.

Methods

This is an observational and retrospective IRB approved chart review study. Patients seen in Ohio State University Gastroenterology clinic between August 1, 2021 and March 31, 2022 were screened for eligibility. Those who have completed the SCOFF questionnaire, are 18 years and older, speak English, and attended an appointment during the study time frame were included. Chart review included demographic information, past medical history, current medication use, eating habits, digestive symptoms, stress, and quality of life. Data was entered in RedCap and analyzed using t-tests.

Results

A preliminary analysis of 20 patients found 20% screened positive for eating disorder using the SCOFF questionnaire, despite none having a prior established eating disorder diagnosis. Those with positive SCOFF screening had a diagnosis of anxiety more commonly than those with a negative SCOFF ($p=0.02$). All patients with a positive SCOFF had gastroesophageal reflux, type 2 diabetes mellitus, and a prescription for a non-SSRI antidepressant. No significant difference in quality of life, perceived stress, dysphagia, or swallowing was identified in this group.

Discussion

The prevalence of positive eating disorder screen in patients with gastrointestinal disease is more than double the prevalence of eating disorders in the United States. Screening for eating disorders in gastrointestinal patients may be an important, previously unrecognized aspect of care for these patients.

#17
Shaina Ailawadi, BS
Case Study
MS4: Wright State University

A Rare Case of Gastrointestinal Amyloidosis Presenting as Dysphagia

Introduction

Amyloidosis is characterized by the extracellular tissue deposition of insoluble protein subunits known as fibrils. The numerous fibril types, locations, and extent of deposition generates variable clinical manifestations leading to significant diagnostic and treatment challenges. Specifically, within the gastrointestinal (GI) tract, the deposition of these abnormal proteins interferes with GI organ structure and function, most commonly in the liver and small bowel presenting as cirrhotic sequelae, malabsorption, and GI bleeding.

Case Presentation

Our patient is a 74-year-old male with a past medical history of congestive heart failure, chronic kidney disease, hypertension and anemia presenting with heart failure exacerbation and an unintentional 20-pound weight loss over the past year. The patient reported new onset dysphagia to solid foods for the last month described as a choking sensation in the distal esophagus without odynophagia. Labs were significant for elevated urine protein, elevated free kappa light chains and elevated free lambda light chains with normal kappa/lambda ratio. EGD findings in the distal esophagus showed a stricture with scar tissue-like area noted near the gastroesophageal junction and erosions in the antrum of the stomach with no evidence of masses. Biopsies of proximal esophagus, distal esophagus, and stomach were all shown to have the presence of dense amorphous material (Fig. 1). Congo red stain showed that the amorphous material was congophilic and displayed green birefringence under polarized light (Fig. 2). Further evaluation confirmed the presence of amyloidosis involving the proximal and distal esophagus as well as the gastric mucosa with chronic inflammation and reactive epithelial changes. In addition to revealing a potential cause of the patient's dysphagia, the patient underwent further investigation of amyloidosis to identify potential bone marrow disorders such as multiple myeloma or plasma cell dyscrasias.

Discussion

The incidence of amyloidosis is difficult to characterize due to its variety of clinical presentations and the fact that only symptomatic patients are generally investigated. For example, previous studies have shown that gastric involvement occurs in 12% by autopsy, with only 1% being symptomatic. With most cases of amyloidosis related to GI involvement being most commonly reported in the small bowel and liver leading to cirrhotic sequelae or GI bleeding, our case report contributes a rare presentation of dysphagia secondary to amyloidosis in the proximal and distal esophageal mucosa as well as the gastric mucosa.

Conclusion

Given the abnormal lab findings coupled with incidental findings of amyloidosis in several locations in our case, early detection and further characterization of the etiology is imperative in determining the treatment course and improving outcomes for these rare patients.

#18
Shaman Dalal, MD
Case Study
PGY5: MetroHealth Medical Center at Case Western Reserve University

Outcomes of anticoagulation in patients with splanchnic vein thrombosis from acute pancreatitis – A nationwide retrospective analysis

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Purpose of the study

Splanchnic vein thrombosis (SVT) is a common sequela of acute pancreatitis. Without anticoagulation, extension of thrombosis can precipitate intestinal ischemia and infarction, and hepatic failure. No current guidelines exist on anticoagulation strategies for SVT in the setting of acute pancreatitis. The primary aim of our study was to evaluate the risk of adverse outcomes associated with splanchnic vein thrombosis secondary to acute pancreatitis in patients that received anticoagulation compared to those that did not, in a sub-national clinical database.

Methods

We performed a retrospective analysis using the IBM Explorys database 5 (1999-2020), a pooled, national, de-identified clinical database of over 72 million unique patients from 26 health care networks and 300 hospitals across the United States. Patient populations were identified using SNOMED and ICD codes. Inclusion criteria for AC group were diagnosis of SVT (portal vein, mesenteric vein and splenic vein thrombosis) for the first time within 6 months of receiving a diagnosis of AP and AC with Warfarin, Rivaroxaban and Apixaban. Exclusion criteria were malignancy, atrial fibrillation, stroke, venous thromboembolism and cirrhosis. Adverse outcomes evaluated were variceal bleeding, ascites, small bowel ischemia, small intestinal excision, splenic infarction and liver failure. Odds ratios with 95% confidence intervals (CI) were calculated to compare outcomes between the AC and non-AC groups. Multivariate logistic regression analysis on aggregated data was calculated to assess risk, in the form of likelihood ratios and ORs with 95% Wald CIs. P-values were calculated using chi-squared analysis.

Results

Out of 104,390 AP patients, 1500 (1.43%) developed SVT. 550 (36.66%) were in AC group and 950 (63.33%) were in non-AC group. AC group had a higher risk of GI bleeding (OR 1.39, 95% CI 1.0001-1.94) compared to non-AC group. The risk of varices, ascites, small intestine excision, splenic infarction, small bowel ischemia and liver failure between the two groups was not statistically significant. Patients with obesity and increased BISAP score were more likely to receive AC. In our multivariate analysis we found that anticoagulation use (OR=0.923, 95% CI 0.887-0.960, p< 0.0001) had a weak negative association whereas cirrhosis (OR=1.374, 95% CI 1.316-1.434, p <0.0001) and DVT (OR=1.088, 95%CI 1.038-1.141, p=0.0005) had weak positive associations with the adverse outcomes.

Conclusion

AC in patient with SVT from AP has not been adequately studied. Moreover, prior studies have reported equivalent recanalization rates with or without AC. Our univariate analysis did not reveal any significant difference in the outcomes of patients with SVT in AP with or without AC, suggesting that there may not be any benefit of using systemic AC in these patients. However, our multivariate analysis noted that AC is negatively associated with all adverse outcomes, and thus may have a protective role for patients with SVT in AP. Both analyses noted that patient who received AC had a higher risk of GI bleed. Thus, AC should be considered on a case by case basis; perhaps in patients with extension of thrombus threatening small bowel ischemia.

#19
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Case Study
PGY2: Mercy Health – The Jewish Hospital

Chronic Mysoline Therapy Associated with the Development of Hepatic Cirrhosis

Case

A 60-year-old male with PMHx of ADHD and essential tremor presented with 2 weeks of melena. He endorsed increased Ibuprofen use over the 2 weeks prior to admission. Physical exam was unremarkable. Chemistry and CBC were largely unremarkable however patient's liver enzymes were elevated. Alk Phos 188, ALT and AST 45 and 54 respectively, GGT 63. Chart review showed persistent elevation of LFT's over past 2 years. GI was consulted and recommended inpatient EGD which showed new-onset hepatic cirrhosis with portal hypertension and varices that were banded. Interestingly the patient had already been following with a GI specialist outpatient for workup of consistently elevated liver enzymes. Initially these abnormalities were attributed to hepatic steatosis and the patient was counseled to pursue lifestyle management to no avail. Other causes of cirrhosis including heavy alcohol use, Hepatitis, family history of liver disease were excluded. Patient's Mysoline had been explored as a potential cause of LFT abnormalities and was switched to Primidone at outpatient visit months prior to hospital admission. Patient was instructed to continue GI follow up outpatient to follow liver enzymes and cirrhosis after discontinuation of Mysoline.

Discussion

Primidone is an anticonvulsant used to treat seizures. It is believed to work by inhibiting action potentials through interactions with voltage-gated sodium channels1. It is metabolized slowly in the liver to phenobarbital. It also induces enzymes such as CYP2C and CYP3A which reduce the efficacy of other drugs including antibiotics, anticonvulsants, steroids and oral contraceptives. Aside from its use in seizure disorders, it has also been used since the 1980's as a valid treatment for essential tremor in place of beta-blockers such as Propanolol.

The incidence of hepatic cirrhosis relating to Mysoline therapy is sparse in the existing literature. There are a handful of case reports which relate to development of hepatic cirrhosis in dogs treated with Primidone2,3. In one case, a dog presented with jaundice and liver enzymes with subsequent biopsy showing hepatocyte necrosis2. Primidone therapy was discontinued and resulted in improvement of liver enzymes and overall hepatic function.

Another case involves a 77-year-old woman who was initially evaluated for syncope and subsequently found to have elevated liver enzymes. She was taking Primidone for essential tremor, discontinuation of the drug resulted in steady improvement of patient's liver enzymes throughout her hospitalization.4

These case studies indicate that Primidone therapy is associated with hepatic cirrhosis and should be evaluated as a culprit once other causes of hepatic cirrhosis are excluded. As for our patient, liver enzymes will be continued to be monitored after discontinuation of Primidone therapy to assess for resolution of LFT abnormalities.

#20
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Case Study
PGY3: OhioHealth Riverside Methodist Hospital

Gastrohepatic Ligament Bronchogenic Cyst Diagnosed by EUS FNA

Bronchogenic cysts pose diagnostic and therapeutic challenges due to its varied locations and presentations.

58-year-old woman presented with two weeks of epigastric and RUQ abdominal pain. Presenting labs: TB 4.3 mg/dL, DB 3.4 mg/dL, AP 328 U/L, AST 1,265 U/L, ALT 1,890 U/L. Workup was negative for pancreatitis, acute hepatitis, and acetaminophen toxicity. CT scan showed biliary duct dilatation with a 5mm stone in the common bile duct, and a 3.5 x 3.6 cm thick-walled mass with rim enhancement and hypodense central component within the gastrohepatic ligament (GHL). EUS characterized the mass as a hypoechoic cystic lesion with a concentric 4mm thick wall. Fine needle aspiration (FNA) of the cyst produced 14ml of brown and viscous fluid. After cyst aspirate, FNA of the decompressed cyst wall was also performed. Cyst fluid amylase was <3 U/L, CEA was 157 ng/mL, and cytology was negative for malignancy. Cytology of the cyst wall showed benign ciliated columnar epithelial cells consistent with a bronchogenic cyst. ERCP was performed during EUS for stone extraction. She then underwent cholecystectomy with improvement of symptoms and liver enzymes. Her asymptomatic bronchogenic cyst is undergoing active surveillance.

Bronchogenic cysts are foregut-derived malformations of the respiratory tract and while relatively rare, is the most common primary cyst of the mediastinum accounting for 6-15% of primary mediastinal masses. The location depends on the embryological stage of development when the anomaly occurs. Most are in the mediastinum and uncommonly in the lung parenchyma, esophagus, heart, subdiaphragm, and retroperitoneum. Only one other case has been reported of a bronchogenic cyst in the GHL. Reported prevalence is 1:42,000-68,000 admissions in two hospital series. Some present with symptoms such as cough, fever, pain, and dyspnea. Complications can arise with compression of mediastinal structures, recurrent infection, hemorrhage, rupture, and malignant degeneration. Others are asymptomatic and incidentally found on chest radiograph or cross-sectional imaging. No standard exists for treatment. Traditionally, patients underwent surgical excision for definitive diagnosis and management. EUS FNA serves as a less invasive method for diagnosis. Controversy still exists regarding management of asymptomatic cysts with several reports advocating for complete removal due to likelihood of development of symptoms and potential for serious illness.

#21
Temitope Olasehinde, MD
Case Study
PGY2: University Hospitals Cleveland Medical Center

Graft-versus-Host Disease Presenting With Esophageal Ulcers

Graft-versus-host disease (GvHD) is a potentially life-threatening complication of allogeneic hematopoietic stem cell transplantation (HSCT). It results from an immune reaction undertaken by alloreactive T cells from the transplant donor against the recipient. GvHD can affect multiple organs like the skin, liver and gastrointestinal (GI) tract, however esophageal involvement is rare with only a few cases reported in the literature. This case highlights a patient who presented with symptomatic esophageal ulcers after receiving HSCT and was subsequently diagnosed with GvHD.

A 63-year-old male with history of chronic lymphocytic lymphoma (CLL) / B-cell prolymphocytic leukemia (PLL) overlap presented to the GI clinic for new-onset odynophagia and solid food dysphagia. His CLL transformed to PLL for which he underwent allogeneic HSCT 1.5 years ago. Current medications included tacrolimus, fluconazole and acyclovir. Physical exam showed multiple buccal mucosal ulcerations and erythematous macular rash on his chest. Labs showed elevated ALP 396 (normal: 33-136 U/L), ALT 243 (normal: 10-52 U/L), AST 162 (normal: 9-39 U/L). Chronic liver disease workup and liver ultrasound were unremarkable. Endoscopy showed circumferential shallow ulcerations in the upper and middle esophagus with biopsy showing no evidence of HSV or CMV infection. Skin rash biopsy showed interface dermatitis suggestive of GvHD. Prednisone 80 mg daily was started and Tacrolimus increased to 0.5 mg twice/day. Symptoms progressively improved and liver tests normalized 6 weeks after.

Esophageal involvement is noted in <15% of GVHD cases. Symptoms are non-specific and diagnosis relies on suggestive clinical, endoscopic and histopathological findings. Endoscopic findings range from normal to esophageal webs, ulcers, vesiculobullous disease and, esophagitis dessicans superficialis. If GVHD is suspected, these esophageal manifestations are typically found in the upper-mid esophagus during the months-years after HSCT; which contrasts the distal esophageal findings that can occur in the first few weeks after transplantation from viral, fungal or reflux esophagitis. Histopathology shows lymphocyte/plasma cell infiltration, cryptitis, fibrosis and apoptosis. Of note, the more severe the endoscopic findings, the less evident the histopathological results are. Treatment consists of immunosuppressants, mainly corticosteroids; and prompt administration is paramount in avoiding progression and fatal complications.