CLINICAL VIGNETTE

A Rare Cause of Bowel Obstruction

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A 62-year-old male with history of squamous cell carcinoma of the left tonsil and benign prostatic hypertrophy, presented to the emergency department (ED) with five days of intractable nausea and vomiting with associated diarrhea. He denied abdominal pain, bloating, fever, or chills but reported difficulty urinating and was not able to empty his bladder. No other associated symptoms were noted. In the ED he was hemodynamically stable, and his physical exam revealed a pale appearing Caucasian male in no acute distress. His vital signs were unremarkable. Abdominal exam was notable for an umbilical hernia, reduced bowel sounds, with no guarding, or rebound. Increased tympanitic percussion was noted over his left upper quadrant and an audible succussion splash was heard over his stomach despite his last oral intake being three hours earlier. Lower abdominal exam was notable for a palpable bladder above the pelvic rim. A computed tomogram (CT) of his abdomen and pelvis without intravenous contrast was notable for dilatation of his stomach and proximal duodenum with a focal transition point at the third part of his duodenum concerning for an obstructive mass. He was also noted to have bladder outlet obstruction and mild to moderate bilateral hydroureteronephrosis. Chest-x-ray was unremarkable. Laboratory studies were notable for WBC 13 u/L, Cr 3.4 mg/dL, normal electrolytes and IgG4 level of 5.3 g/l. He was given two and a half liters of normal saline in the ED. The patient was made nil per mouth (NPO) and a nasogastric tube (NGT) and foley catheter were placed. He was started on continuous intravenous fluids and antiemetics. The patient underwent an esophagogastroduodenoscopy (EGD) which was remarkable for esophagitis, gastritis, and duodenitis. The second and third part of his duodenum were not evaluated due to a tight extrinsic obstruction. The biopsies taken were significant for chronic duodenitis and gastritis. He was started on forty milligrams of pantoprazole twice daily and one gram of sucralfate. A follow up CT scan with intravenous contrast demonstrated a poorly defined pancreatic mass in the uncinate process. A second endoscopy with endoscopic ultrasound (EUS) showed the mass lesion in the second and third part of his duodenum, separate from his pancreas and external to the duodenal wall. A biopsy showed no evidence of malignancy. Based on these unusual findings an exploratory laparoscopy with extension to open laparotomy was notable for a retroperitoneal mass, an incarcerated umbilical hernia which was repaired and a stercoral rectal ulcer and anal fissure. Post operatively the patient developed a post-surgical ileus which resolved with supportive care. The result of the anatomical pathology of his retroperitoneal mass showed no evidence of malignancy but was notable for retroperitoneal fibrosis (Ormond's disease) causing pressure effect on the third part of his duodenum with associated high grade bowel obstruction. He was treated with rituxumab and tapering dose of methylprednisolone sodium succinate and eventually discharged home with tapering dose of prednisone. He subsequently received three further doses of rituximab.

Discussion

Retroperitoneal fibrosis (RPF) is a rare condition characterized by the presence of inflammatory and fibrous tissue in the retroperitoneum. This disorder was initially called Ormond's[1] disease and has also been referred to as periureteritis fibrosa, periureteritis plastica, chronic periureteritis, and fibrous retroperitonitis. It can be primary (idiopathic) or secondary. Idiopathic disease accounts for seventy percent of cases and can be IgG4 related or non IgG4-related. Confirmation of the diagnosis by biopsy of an involved organ should be performed.[2] Histopathology findings are important to the diagnosis but not diagnostic alone of IgG4-RD. Overall diagnosis should be made in the context of clinical, serologic (IgG4 level), and radiologic data. Secondary RPF can result from infections, malignancy, drugs, retroperitoneal hemorrhage, or various other disorders. The incidence of idiopathic (primary) disease ranges from 0.1 to 1.3 cases per 100,000 persons per years.[2] Idiopathic disease usually occurs from 40 to 60 years of age. Some, but not all studies suggest a 2:1 to 3:1 male-to-female predominance. Asbestos[3] or tobacco smoke exposure may result in a three- to fourfold increase in the risk of RPF. The combination of smoking and asbestos exposure is associated with an 8 to 12 times increased risk. Idiopathic RPF is an immune-mediated disease accounting for over 70 percent of cases. It can either present in isolation or in association with other autoimmune diseases. Pain in the lower back, abdomen, or flank is the most common presenting symptom among patients with RPF.[4] Other common symptoms, which may occur with pain or in isolation, include malaise, anorexia, weight loss, fever, nausea, vomiting, lower extremity edema, urinary symptoms. Physical exam findings can include new onset HTN, lower extremity edema, thrombophlebitis, DVT, hydrocele, or varicocele. Retroperitoneal fibrosis (RPF) should be suspected in patients who have characteristic clinical features, such as flank or abdominal pain, in association with newly detected kidney function impairment. However, it is more commonly identified incidentally when radiologic studies are performed to evaluate for urinary tract obstruction or lower limb venous or arterial insufficiency. Initial diagnostic tests include CT/ MRI chest, abdomen and

pelvis, CT guided biopsy or open biopsy.[5] Many clinicians do not perform a biopsy in patients who have an imaging diagnosis of idiopathic RPF, unless the patient is about to undergo surgery for repair of abdominal aortic aneurysm (in the case of inflammatory aneurysms or perianeurysmal fibrosis) or for surgical ureterolysis to treat urinary tract obstruction. Some of the more common drugs include ergot-derivatives, methysergide used rarely to treat resistant migraine,[6] bromocriptine, beta blockers, methyldopa, hydralazine, and analgesics. Biological agents such as etanercept, and infliximab, have also been implicated. Malignancies such as carcinoid, Hodgkin and non-Hodgkin lymphoma's, sarcomas, colorectal, breast, prostate, and bladder carcinoma have also been shown to have RPF as consequences. Infections such as tuberculosis, histoplasmosis, actinomycosis, especially in women with a history of intrauterine device use should also be ruled out. Radiation therapy for testicular seminoma, colon, pancreatic cancer is also associated. Finally, surgical procedures especially lymphadenectomy, colectomies, and aortic aneurysmectomy have associations with RPF. Multi-factorial idiopathic fibrosis (MIF) is another rare associated syndrome resulting in fibrosis affecting various organs. This includes Dupuytren's contractures, lymphoid hyperplasia, Peyronie's disease, testicular fibrosis, and pachymeningitis.[7,8] Pancreatic fibrosis in MIF and continuous extension of retroperitoneal fibrosis or sclerosing mesenteritis into the pancreas or around the duodenum can also occur, and indeed were entertained as a possible cause in this patient.

Glucocorticoid treatment is the mainstay of therapy for idiopathic RPF.[9] However, patients with relative contraindications to glucocorticoids, should be treated for the shortest possible duration and at a lower dose (prednisone 25 mg per day), in combination with other immunosuppressive medications. Our patients IgG4 level was elevated above normal range of 1.3 g/L at 5.3g/l. IgG4-related disease is treated based on an international consensus guideline statement.[10] This was formulated largely on observational data and expert opinion. The principle of treatment is B-cell depletion with rituximab. However, the optimal treatment for IgG4-RD is not fully evidence based as no randomized trials have compared approaches to the treatment of IgG4-RD and other organ-based diseases.

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