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An Uncommon Cause of Abdominal Pain: Mesenteric Panniculitis

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Abstract Mesenteric panniculitis is a rare, benign, and chronic fibrosing inflammatory disease affecting the adipose tissue of the mesentery that can lead to intractable abdominal pain. We report a case of a 74-year-old male with multiple autoimmune disorders, including paroxysmal nocturnal hemoglobinuria (PNH) and hypothyroidism, that presented to the emergency department with abdominal pain for over three weeks. Abdominal CT showed diffuse stranding of the mesenteric fat compatible with mesenteric panniculitis. The patient received treatment with steroids, which led to resolution of his abdominal pain.

Keywords: *mesenteric panniculitis, intractable abdominal pain, corticosteroids, paroxysmal nocturnal hemoglobinuria*

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1. Introduction

Abdominal pain is one of the most common conditions that call for prompt diagnosis and treatment [1]. There are multiple etiologies of abdominal pain, from the more benign (e.g., gastroenteritis) to the more severe causes (e.g., bowel incarceration). Common causes include cholelithiasis, hepatitis, liver abscess, pancreatitis, peptic ulcer disease, acute myocardial infarction, appendicitis, nephrolithiasis, urinary tract infections, inflammatory bowel disease, celiac disease, foodborne illness or intolerance, and malignancy. Less commonly, mesenteric panniculitis may cause abdominal pain and should be considered as part of the differential diagnosis when approaching abdominal pain in patients [2]. Obtaining a thorough history and physical examination can propound a diagnosis [1]. Additionally, laboratory and radiologic workup can help to achieve an accurate diagnosis and treatment plan.

We discuss a case of a patient with abdominal pain that was initially thought to be secondary to colitis based on history, physical exam findings, and lab results. It was only after obtaining CT imaging of the abdomen that we were able to diagnose mesenteric panniculitis.

2. Case Presentation

A 74-year-old male with a past medical history of hypothyroidism, diabetes mellitus, congestive heart failure, and paroxysmal nocturnal hemoglobinuria (PNH) presented to the emergency department with the complaint of abdominal pain for over three weeks. He described abdominal pain as intermittent, diffuse, colicky, sharp, and non-alleviated with pain medications. He also reported anorexia, nausea, and food intolerance. Physical examination was remarkable for a distended abdomen with associated diffuse tenderness to palpation. Initial laboratory tests were significant for WBC 8.0 K/uL, Hgb 12.0 g/dl, and Hct 34.8%. Inflammatory markers were mildly elevated with an ESR of 26 mm/hr and CRP of 4 mg/L. Abdominal pain was initially thought to be secondary to colitis, and the patient received treatment with intravenous ciprofloxacin and metronidazole. Subsequently, an abdominal CT was performed and showed diffuse stranding of the mesenteric fat at the root of the mesentery with perivascular sparing compatible with mesenteric panniculitis (Figure 1).

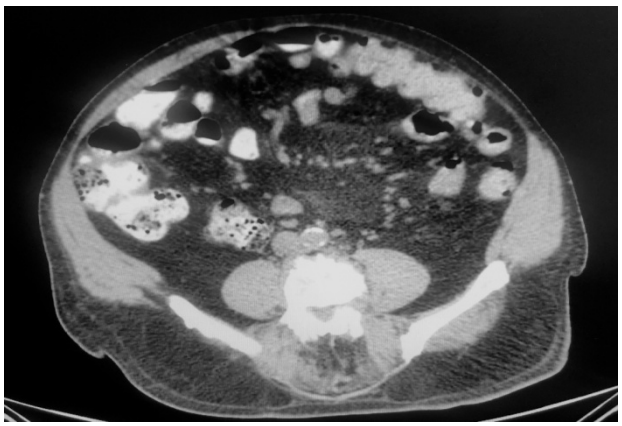

Figure 1. Axial contrast-enhanced CT image showing a diffuse stranding of the mesenteric fat at the root of the mesentery

Patient was admitted for further management of abdominal pain secondary to mesenteric panniculitis. He received treatment with intravenous methylprednisolone for seven days. Over the course of hospitalization, the patient showed improvement of his presenting symptoms and was discharged home on an oral prednisone taper therapy for eight days. During outpatient follow up the patient reported complete resolution of abdominal pain with treatment.

3. Discussion

Mesenteric panniculitis is a rare, benign, and chronic fibrosing inflammatory disease affecting the adipose tissue of the mesentery of the small intestine and colon [3]. It can be more commonly found in men than women, with a male-to-female ratio of 2-3:1. Although the exact etiology remains unknown, the disease has been associated with other conditions, including neoplasms, autoimmune disease, ischemia, and abdominal trauma. Several factors support the hypothesis that mesenteric panniculitis is due to an autoimmune disease. Other theories have been proposed to explain this disorder including post-inflammatory changes secondary to acute inflammation, infection, and decreased blood supply to the mesentery [4].

Mesenteric panniculitis usually presents with pain in the mid-abdomen but can be present in other areas of the abdomen or pelvis. Patients can experience nausea, emesis, bloating, early satiety, loss of appetite, unintended weight loss, fatigue, fever, diarrhea or constipation [4]. Abdominal CT is the imaging modality of choice when evaluating suspected mesenteric panniculitis, but the definitive diagnosis is established by biopsy. The most common and specific findings in abdominal CT are a fat ring sign that reflects the preservation of fat around the mesenteric vessels and the presence of a tumoral pseudo capsule, which is detected in 50% of patients [5]. Nonspecific laboratory abnormalities, such as elevated inflammatory markers and reduced red blood cell counts, have been reported but are not typical, and laboratory values are usually within normal limits [4].

Mesenteric panniculitis can be successfully treated conservatively without surgical intervention [6]. In some cases, surgery is needed for patients with small bowel obstruction [6]. The treatment goals are to reduce mesenteric inflammation and control symptoms of the disease [4]. Anti-inflammatory agents, especially corticosteroids, are the initial treatment of choice. Additional anti-inflammatory drugs that can be used to treat this condition include colchicine, azathioprine, cyclophosphamide, infliximab, and pentoxifylline. There are prospective studies that show effectiveness in regression of symptoms using the drug thalomide, an immunomodulator [4].

This case illustrates an uncommon cause of abdominal pain in a patient with multiple autoimmune disorders, including paroxysmal nocturnal hemoglobinuria and hypothyroidism. Paroxysmal nocturnal hemoglobinuria is an acquired disorder of hematopoiesis characterized by pancytopenia, intravascular hemolysis, and bone marrow aplasia. It is manifested by repeated episodes of hemoglobinuria and a tendency to develop widespread venous thrombosis, which may affect unusual sites, such as hepatic and mesenteric veins [7]. There is an incidence of 3% to 8% of mesenteric venous thrombosis leading to bowel ischemia in patients with paroxysmal nocturnal hemoglobinuria [7]. The mesenteric thrombosis could lead to mesenteric ischemia, which is related to one of the possible causes of mesenteric panniculitis. The association between paroxysmal nocturnal hemoglobinuria and mesenteric ischemia with the subsequent development of mesenteric panniculitis should be further studied.

4. Conclusions

Abdominal pain can be due to multiple diseases, and physicians should be able to recognize all causes of abdominal pain, including uncommon conditions like mesenteric panniculitis. Mesenteric panniculitis is a rare disease associated with autoimmune disorders whose symptoms can be controlled with anti-inflammatory agents like steroids. In this case, treatment with corticosteroid improved the clinical symptoms of this patient, supporting the efficacy of steroids in the treatment of mesenteric panniculitis as previously illustrated in the literature. The recognition and characterization of this disease are critical for the appropriate therapy and prevention of further complications.

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