Uncommon Solitary Mesenteric Mass: Mesenteric Panniculitis

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ABSTRACT

Mesenteric panniculitis is a rare, benign disease characterized by a chronic non-specific inflammatory process of mesenteric fat tissue with unknown etiology. Its clinical outcome ranges from complete resolution without any treatment to rapid progression culminating in death. So far, there is no established treatment available for its management. A 53-year-old female was admitted to our hospital because of intermittent abdominal pain, abdominal distension and early satiety for three months. Her abdominal CT scan revealed a solitary, well-defined, heterogeneous mass with a diameter of approximately 3.5cm x 2.8cm in the mesentery of small bowel. Exploratory laparotomy revealed yellowish-grey mass with a gritty consistency and histopathology of the resected specimen confirmed it to be mesenteric panniculitis. An increased awareness may lead to the use of a less invasive diagnostic approach and optimal management of this rare disease entity.

Keywords: *Computerized Tomography (CT); Mesenteric Panniculitis (MP); treatment.*

INTRODUCTION

Mesenteric Panniculitis (MP) is a rare, benign disease characterized by a chronic, nonspecific inflammatory process of mesenteric fat tissue with unknown etiology. MP was first described by Jura in 1924 as "Retractile Mesenteritis" and further labeled as 'Mesenteric panniculitis' by Odgen in later in the 1960s.[1] It is more common in Caucasian men, commonly presenting age ranging from 20-80 years. The common presentation of MP is abdominal pain, abdominal distention and altered bowel habit. On CT scan, MP generally presents as encapsulated heterogeneous masses localized to the root of the mesentery or adjacent intestinal loop. The fate of MP ranges from spontaneous resolution to various intervention by medical/surgical therapy and radiotherapy.

CASE REPORT

A 53-year-old female was admitted to our hospital because of intermittent abdominal pain, abdominal distension and early satiety for three months. There was no history of fever, diarrhea or constipation. She underwent appendectomy 30 years back. She also had hypertension and was taking oral Nifedipine since

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four years. On physical examination, there was a soft, freely movable, tender mass in the left lower abdomen. Hematological tests were within the reference range including serum levels of C-reactive protein, CEA and CA19-9. Abdominal ultrasound showed hypo-echoic mass measuring 3.1cm × 3.2cm in the left lower abdomen, suspicious of gastrointestinal stromal tumor. Abdominal CT scan revealed a solitary, well-defined, heterogeneous mass with a diameter of approximately 3.5cm x 2.8cm in the mesentery of small bowel; associated with partial fat ring and attenuation values equal to that of heterogeneous fatty tissue (Figure 1), highly suggestive of mesenteric panniculitis however mesenteric liposarcoma could not be ruled out so exploratory laparotomy was done. Per operative, there was a well-demarcated mass measuring 3.0cm × 2.0cm × 2.0cm in the mesentery of small intestine, without involving the mesenteric root and small intestine. The resected mass was yellowish-grey in color with a gritty consistency that suggested both fibrosis and fat necrosis (Figure 2). Histopathological examination of the mass revealed fat necrosis, fibrosis, old blood and chronic inflammation of mesentery that was consistent with mesenteric panniculitis (Figure 3). The post-operative course was uneventful, and she is clinically well with no evidence of disease in three years follow-up of ultrasonography.

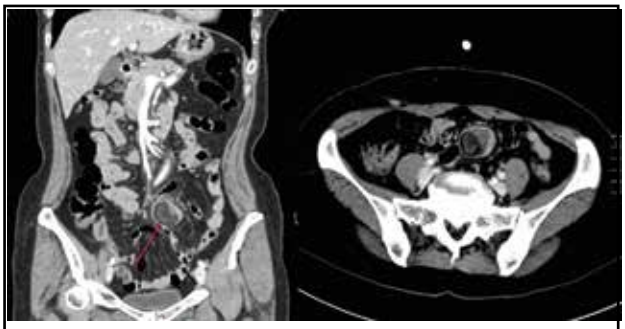

Figure 1. Coronal and axial scan showing a solitary well-defined heterogeneous mass in the mesentery of small bowel, associated with partial fat ring and heterogeneous fatty tissue.

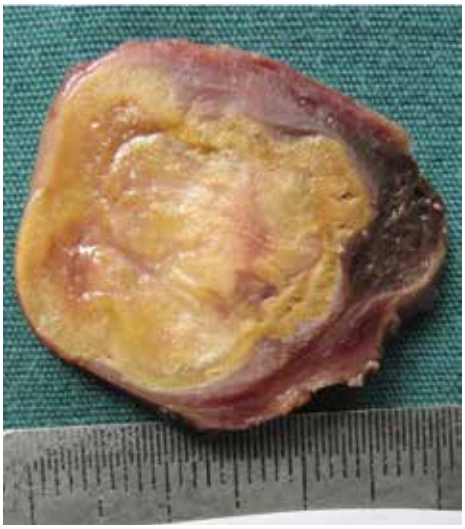

Figure 2. Gross specimen showing yellowish-grey mass consisting both fibrosis and fat necrosis.

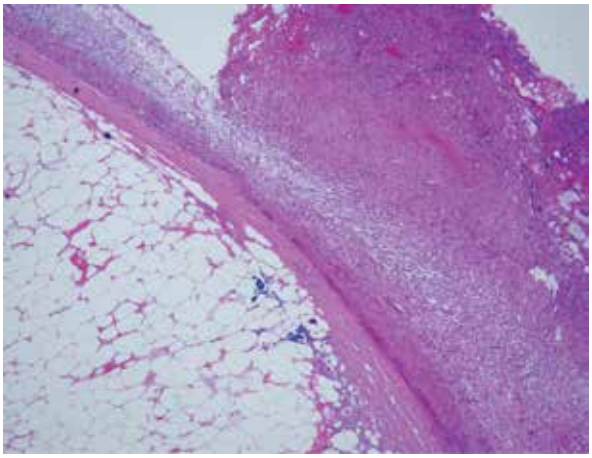

Figure 3. Histopathology showing fat necrosis, fibrosis, old blood and chronic inflammation of mesentery consistent with mesenteric panniculitis.

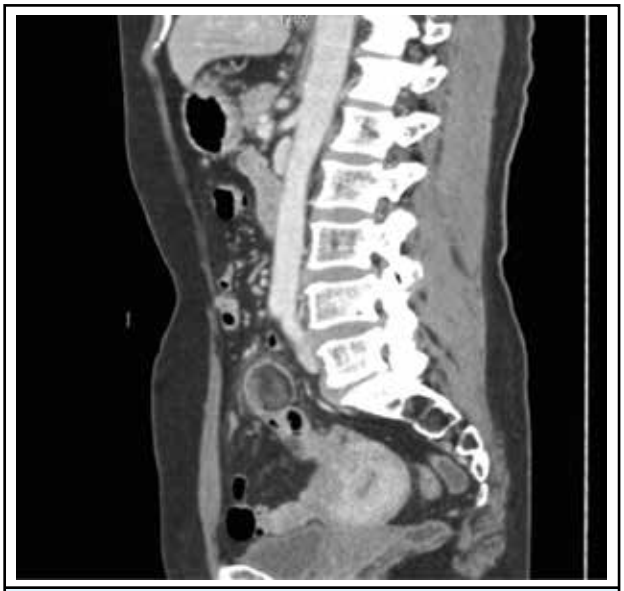

Figure 4. Sagittal section showing a solitary well-defined heterogeneous mass in the mesentery of small bowel, associated with partial fat ring and heterogeneous fatty tissue.

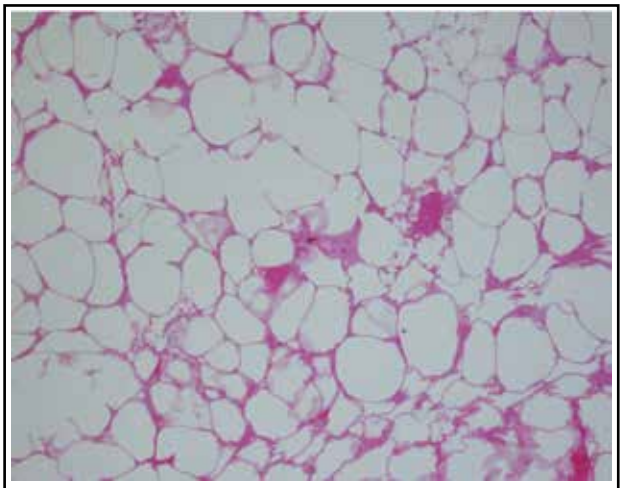

Figure 5. Histopathology showing fat necrosis, fibrosis, old blood and chronic inflammation of mesentery consistent with mesenteric panniculitis.

DISCUSSION

Mesenteric panniculitis (MP) is a rare clinical entity and around 300 cases have been reported in literatures worldwide. It is a benign and chronic fibrosing inflammatory disease that most commonly involves the adipose tissue of the mesentery of small intestine and colon. It was first described by Jura in 1924 as 'retractile mesenteritis' and further labeled as 'mesenteric panniculitis' by Odgen later in the 1960s. Currently, it has several names: sclerosing mesenteritis, mesenteric lipodystrophy, mesenteric sclerosis, retractile mesenteritis, mesenteric Weber-Christian disease, liposclerotic mesenteritis, lipomatosis and lipogranuloma of the mesentery.[1] Many studies have indicated that the disease is more common in men, with a male:female ratio of 2-3:1,[1-3] and more common in Caucasian men.[1] MP affects a large age range from 20 to 80 years but is most common in individuals aged 50 to 60 years.[2] The terms MP, sclerosing mesenteritis, and mesenteric lipodystrophy have been applied by different authors depending on the predominant presentation of the different phases of the same clinical entity. The etiology of this disease entity still remains unclear but probably associated with traumatic, hypoxic, infectious, neoplastic and autoimmune mechanism.[4] In a study of 92 cases of MP, a history of abdominal surgery was present in approximately 40% of patients.[5] However, our case cannot be explained by surgery or surgical related cause because, the mean clinical progression is usually six months ranging from two weeks to 16 years,[1] and in our case she underwent appendectomy 30 years back .The majority of patients with MP have no symptoms related to the disease at the time of diagnosis. When symptoms are present, the most common clinical presentation of MP is abdominal pain and abdominal mass, as described in our case. Additional findings at presentation include abdominal distention, diarrhea, constipation, anorexia, weight loss, fatigue, fever of unknown origin, ascites, and pleural/pericardial effusion. Laboratory parameters usually tend to be within normal range. Neutrophilia, increased erythrocyte sedimentation rate, CRP, or anemia has occasionally been reported in MP.[5] Histologically, the disease progresses in three stages. The first stage is mesenteric lipodystrophy in which a layer of foamy macrophages replaces the mesenteric fat. Acute inflammatory signs are minimal or nonexistent, and the disease tends to be clinically asymptomatic with a good prognosis. In the second stage, termed mesenteric panniculitis, histology reveals an infiltrate made up of plasma cells and a few polymorphonuclear leukocytes, foreign-body giant cells, and foamy macrophages. The final stage is sclerosing, which shows collagen deposition, fibrosis, and inflammation. Collagen deposition leads to scarring and retraction of the mesentery, which, in turn, leads to the formation of abdominal masses and obstructive symptoms.[5] The exact diagnosis is often difficult and is usually made by finding one of three major pathological features; fibrosis, chronic inflammation, or fatty infiltration of the mesentery. To some extent, all three components are present in most cases.[1] CT scan has proved to be far superior, popular and sensitive to other radiological modalities, however MRI and PET/CT can be used as alternative modalities with limited specificity but these modalities are also limited because of their cost and lack of availability. Their specificity is limited

since a broad differential diagnosis exist for mass lesions of the mesentery, in particular for mesenteric tumor involvement, as in our case it was difficult to differentiate MP from liposarcoma. In general, CT changes consistent with MP include encapsulated, heterogeneous masses localized to the root of the mesentery or adjacent intestinal loops. Most patients have a left-sided orientation of disease with scattered, well-defined soft tissue nodules of <5 mm. Many have a 'pseudotumoral stripe' of tissue surrounding the mass lesion which may be seen in conjunction with mesenteric vessels which are surrounded or displaced by fat but not invaded.[6] Calcification may be present, usually in the central necrotic portion of the mass, and may be related to fat necrosis.[7] MP usually has an uneventful clinical course and may resolve spontaneously. However, some patients require medical treatment, with different degrees of success.[8] Therapy is individualized on a case by case basis. Treatment may be attempted with a variety of drugs including steroids, thalidomide, cyclophosphamide, progesterone, colchicine, azathioprine, tamoxifen, antibiotics and emetine, or radiotherapy.[1] Surgery is often necessary for those patients with medical therapy failure, bowel obstruction or suspected malignant mass like in our case where it was confirmed as MP only by excisional biopsy report. We believe surgical restriction should be limited only to cases of massive involvement when the removal of the affected part is impossible and hazardous.

Though MP is a rare clinical entity, a wide range of clinical presentations have been reported in literatures. CT scan would be efficient optimal diagnostic tool due to its frequent availability and cost effectiveness to reach the proper diagnosis and stepping towards the proper treatment.

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