

## Case Report

# Efficacy of Colchicine in the Treatment of Mesenteric Panniculitis in a Young Patient

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## ABSTRACT

Mesenteric panniculitis (MP) is a rare inflammatory and fibrotic disease of the mesentery of unknown etiology. It has various clinical and radiological manifestations, posing a diagnostic challenge for clinicians. Its diagnosis is indicated via radiologic imaging and is usually confirmed via peritoneal biopsies. We describe a case of a patient with histopathologically proven MP, in which steroid dependence was successfully managed with colchicine.

**Key Words:** Colchicine, mesenteric panniculitis, treatment

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Mesenteric panniculitis (MP) is a rare fibroinflammatory disease of unknown etiology that usually affects the small-bowel mesentery, although it has also been shown to affect the mesocolon in 20% of all reported cases.<sup>[1,2]</sup> Rare sites of involvement include mesoappendix, peripancreatic area, omentum, and pelvis.<sup>[3,4]</sup> The rarity of the disease results in a limited ability to study its demographic and clinical features, natural history, and response to therapy.

We report the case of a 28-year-old man suffering from histologically proven MP, who remains in long-term remission with colchicine.

## CASE REPORT

A 28-year-old Greek male patient presented with a 6-month history of severe episodes of pain leading to multiple previous admissions into the local hospital. Repeated

laboratory tests and abdominal computed tomography (CT) scans were unremarkable with the exception of a mild increase in C-reactive protein (CRP) levels. Past medical history revealed two abdominal surgical operations for umbilical and inguinal hernias. No palpable mass was found during the clinical examination of the abdomen. Laboratory tests, including full blood count, liver and renal biochemistry, electrolyte levels and tumor markers (CEA and CA 19-9), were within the normal range, while CRP was 8.5 mg/l (normal range: 0-5 mg/l). Upper and lower gastrointestinal endoscopies were both unremarkable. A single-balloon enteroscopy, was normal up to the mid-ileum. Multidetector abdominal CT showed a well-defined fatty mass in the mesentery, displacing small bowel loops, while encasing the mesenteric vessels [Figure 1]. Magnetic resonance imaging (MRI) showed a mass with intermediate-low signal intensity in the mesentery that displaced small bowel loops [Figure 2]. Due to the high suspicion of MP, diagnostic laparoscopy was performed and multiple peritoneal biopsies were taken. Histopathology demonstrated mononuclear cell inflammatory infiltrate, focal fat necrosis and fibrosis, findings which are compatible with mesenteric panniculitis [Figure 3]. No granulomas or foreign body reactions were found. Stains for acid-fast bacilli and fungi, Congo-red for amyloid and CD-15 stain for Sternberg-Reed cells of Hodgkin's lymphoma were

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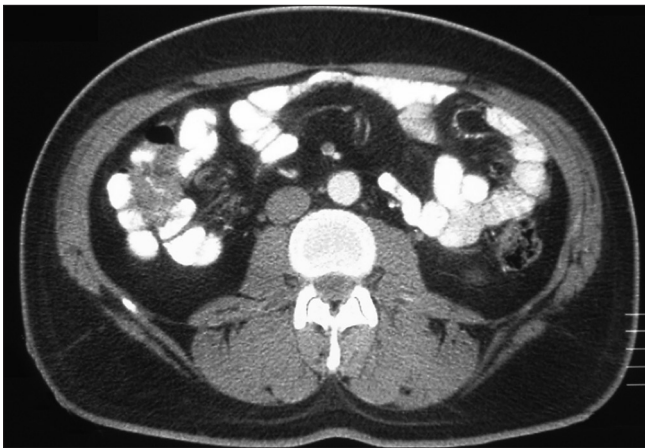
negative. Moreover, antibodies for CD-34, F-VIII, HHF-35, CK516 and p53 were negative.

The patient was put on methylprednisolone in September 2008, with a starting daily dose of 32 mg. His general condition improved rapidly as the episodes of abdominal pain disappeared and CRP showed a rapid normalization. However, three attempts to taper corticosteroid treatment failed, with a recurrence of abdominal pain and an elevation of CRP. At the end of 2009, the patient was considered to be steroid-dependent at a methylprednisolone dose of 12 mg/day. He declined the recommended treatment with azathioprine or cyclophosphamide, but he accepted a treatment consisting of colchicine at a dose of 1 mg/day. The administration of colchicine allowed the patient to taper down corticosteroids without any recurrence of symptoms. At the recent 1-year

follow up, the patient has remained asymptomatic. His latest CT examination showed a complete absence of the previous radiological manifestations of the disease [Figure 4].

## DISCUSSION

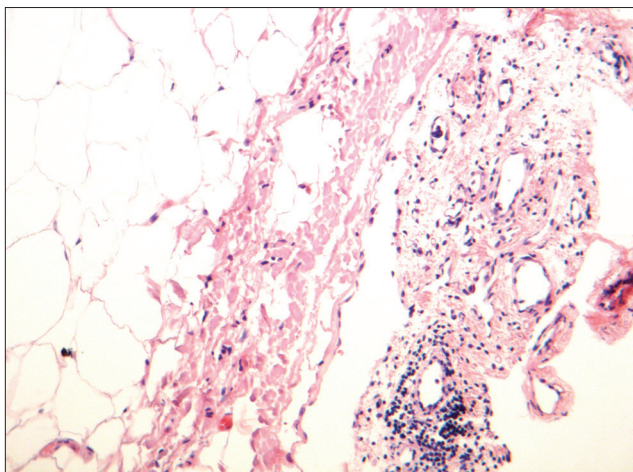
MP is typically seen in the sixth decade of life. It is twice as common in males as in females.<sup>[1,2]</sup> The fibrosis most commonly affects the small-bowel mesentery and the omentum, with rare involvement of the pancreas and retroperitoneum.<sup>[4,5]</sup> The pathophysiology of MP remains unknown.<sup>[4]</sup> Various mechanisms have been postulated, including traumatic (surgery), hypoxic, allergic, infectious and autoimmune ones.<sup>[1,3]</sup> In a recent study of 92 cases of MP,<sup>[6]</sup> a history of abdominal surgery was present in approximately 40% of patients. The various clinical features of the disease include abdominal



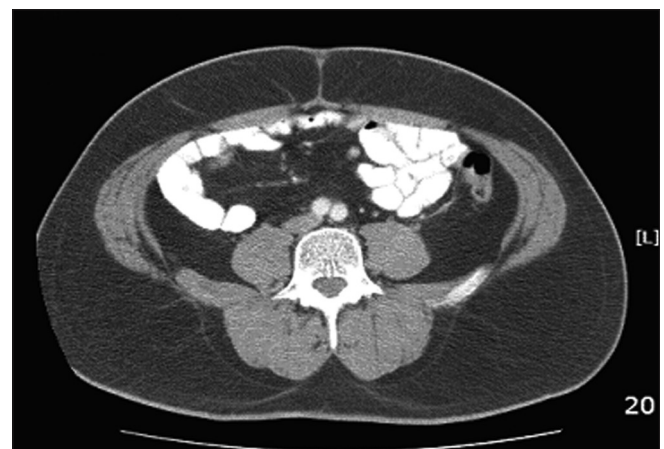
**Figure 1:** Axial contrast enhanced CT image shows displacement of small bowel loops by a well-defined fatty mass in the mesentery. Notice that the mesenteric vessels are not displaced but rather engulfed in the mass



**Figure 2:** Axial T1-weighted MR image showing a mass with intermediate-low signal intensity in the mesentery that displaces small bowel loops which have a spiculated and irregular outline (arrow). Flow voids correspond to lumen of mesenteric vessels that are engulfed in the mass but not displaced (arrowheads)



**Figure 3:** Histological view of mononuclear cell inflammatory infiltrate, focal fat necrosis and fibrosis-findings compatible with mesenteric panniculitis (H and E, x40)



**Figure 4:** Follow-up contrast enhanced CT image demonstrating normal findings

pain, vomiting, diarrhea, constipation, anorexia, weight loss, fatigue, fever of unknown origin, ascites, pleural and pericardial effusion. In rare cases, rectal bleeding, jaundice, gastric outlet obstruction, and even acute abdomen have been reported.<sup>[1,3,6]</sup> Laboratory parameters usually tend to be within the normal range. Neutrophilia, increased erythrocyte sedimentation rate, CRP, or anemia has occasionally been reported in MP.<sup>[3,6]</sup>

Histologically, the disease progresses in three stages.<sup>[4]</sup> 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. Radiological imaging may be diagnostically helpful. CT and MRI sometimes reveal fat-density masses arising from the mesentery, surrounding mesenteric vessels and displacing the bowel with no evidence of invasion.<sup>[7]</sup> A “pseudotumoral stripe” around a mesenteric vessel on CT may be revealing.<sup>[7]</sup> The differential diagnosis of MP is broad and includes diseases which could affect the mesentery. Such diseases include lymphoma, well-differentiated liposarcoma, peritoneal carcinomatosis, carcinoid tumor, retroperitoneal fibrosis, lipoma, mesenteric desmoid tumor, mesenteric inflammatory pseudotumor, mesenteric fibromatosis and mesenteric edema.<sup>[1-3]</sup>

The clinical management of MP depends on the histological findings and, hence, the stage of the disease. In the early stages, when fat necrosis is the main feature, it tends to settle spontaneously without treatment.<sup>[3]</sup> As the disease progresses and chronic inflammation with or without fibrosis predominates, various agents have been used alone or in combination. Treatment has been attempted with a variety of drugs including steroids, cyclophosphamide, colchicine, azathioprine, tamoxifen, or radiotherapy, with different degrees of success.<sup>[8-10]</sup> Surgery is recommended only for advanced irreversible inflammatory changes or in cases of bowel obstruction.<sup>[3]</sup> Overall, prognosis is usually good and recurrence seems to be rare. However, despite the fact that, in the majority of patients, the course of MP is favorable, in approximately 20% of them it is associated with a significant morbidity and a chronic debilitating course.<sup>[3]</sup>

This case showed peculiarities which made a definite diagnosis difficult. Our patient was the youngest of all reported cases of MP in the literature. His clinical profile was dominated by episodes of severe abdominal pain, accompanied only by

the elevation of CRP, as a marker of acute phase response; his initial abdominal CT and US were negative. Multidetector abdominal CT and MRI posed the suspicion of MP, confirmed by laparoscopy with biopsies. The patient initially received a course of steroids with a dramatic response, leading to a complete resolution of symptoms; however, symptoms reappeared rapidly after steroid discontinuation. The patient refused to receive treatment with azathioprine and cyclophosphamide, because of their potential severe side effects. Our patient is the second case which addresses the successful role of colchicine therapy in the maintenance of remission of MP.<sup>[10]</sup> Mechanisms by which colchicine acts under pathological conditions are speculative and include (a) binding  $\beta$ -tubulin and making  $\beta$ -tubulin-colchicine complexes, which inhibit the assembly of microtubules and the mitotic spindle formation; (b) modulation of the production of chemokines and prostanoids; and (c) inhibition of neutrophils and endothelial cell adhesion molecules.<sup>[11]</sup>

In conclusion, although a large clinical trial of colchicine as monotherapy in MP is difficult to be performed, our case addresses its role in the maintenance of remission of this rare disease.

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