

Mesenteric panniculitis patients requiring emergency surgery: Report of three cases

Mustafa DUMAN¹, Osman KOÇAK², Olgaç FAZLI³, Cengiz KOÇAK⁴, Ali Emre ATICI¹, Uğur DUMAN⁵

Department of ¹Gastrointestinal Surgery, Kartal Koşuyolu Training and Research Hospital, İstanbul
 Departments of ²General Surgery, ³Pediatric Surgery and ⁴Pathology, Kütahya State Hospital, Kütahya
 Department of ⁵General Surgery, Kilis State Hospital, Kilis

Mesenteric panniculitis is a rare, benign disease characterized by a chronic non-specific inflammatory process of mesenteric fat tissue with unknown etiology. The small bowel mesentery is affected mostly. This process rarely involves the large intestine mesentery. Mesenteric panniculitis includes symptoms as abdominal pain, nausea and vomiting, diarrhea, constipation, and fever. In our cases, we had difficulty in the preoperative diagnosis as the clinical changes imitated an obstruction or ischemia of the small bowel. All the cases required emergency abdominal surgery and partial jejunal resection. The aim of this article was to present three cases of mesenteric panniculitis of the small bowel mesentery requiring emergency surgery together with a short review of the literature.

Key words: Panniculitis, peritoneal, acute abdomen

Acil cerrahi gereken mezenterik pannikülit hastaları: 3 olgu sunumu

Mezenterik pannikülit; mezenterik yağ dokusunun etyolojisi bilinmeyen ve kronik non-spesifik inflamatuvar süreç ile karakterize nadir görülen benign bir hastalıktır. Sıklıkla ince barsak mezenteri etkilenir. Bu süreç nadiren kalın barsak mezenterini etkiler. Mezenterik pannikülit; karın ağrısı, bulantı - kusma, diare, konstipasyon ve ateş gibi semptomları içerir. Olgularımızda ince barsak obstrüksiyonunu veya iskemisini yansıtan klinik değişiklikler gibi preoperatif tanısal zorluklarla karşılaştık. Bütün olgular için acil abdominal cerrahi ve parsiyel jejunal rezeksiyon gerekli oldu. Bu bildirim amacını acil cerrahi müdahale gerektiren üç mezenterik pannikülit vakasını ve literatürün kısa bir incelemesini sunmaktır.

Anahtar kelimeler: Pannikülit, peritoneal, akut batın

INTRODUCTION

Mesenteric panniculitis (MP) is a rare disorder characterized by a chronic benign fibro-inflammatory process and presence of fat necrosis involving adipose tissue of the bowel mesentery (1-4). The cause of the disease is unclear (5). Usually, the clinical presentation and laboratory findings are non-specific (5,6). Computed tomography (CT) is an excellent imaging modality for detection of MP (7). The first known series, comprising 34 cases, was published in 1924, and this series report is attributed to Jura, who described a condition of “retractile sclerosing mesenteritis”; this was further labeled

as “mesenteric panniculitis” by Odgen (8,9,10). Currently, this entity is known by several different names, for instance, mesenteric Weber-Christian disease, mesenteric lipodystrophy, sclerosing mesenteritis, and liposclerotic mesenteritis. Today, the spectrum of pathologic findings ranges from MP to retractile mesenteritis (11). Surgical treatment should be exclusively attempted when intestinal obstruction or ischemia occurs. We report three cases of MP requiring emergency surgery. We present details of these cases as well as a literature review to compare the various presentations.

Address for correspondence: Uğur DUMAN
 Kilis State Hospital, Department of General Surgery,
 Kilis, Turkey
 E-mail: drugurduman@yahoo.com

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CASE REPORT

CASE 1

A 52-year-old male patient was admitted to our department with a three-day history of severe abdominal pain, distension, anorexia, vomiting, and constipation. On the physical examination, he was pale with abdominal distension and tenderness. Plain abdominal X-rays and abdominal ultrasound showed dilated small intestinal loops with multiple air-fluid levels. The laboratory data were hemoglobin 12.4 g/dl, white blood cell count 24,700/ml, and platelet count 26,600/ml. The liver function tests and urinalysis were normal. The patient underwent an exploratory laparotomy in our department. Approximately 50 cm of the distal jejunum showed ischemic condition and partial necrosis, and the proximal jejunum was dilated; the distal jejunum mesentery was also thickened with ischemic appearance. Ischemic and necrotic segments of the jejunum and mesentery were removed (Figure 1). The biopsy of the pathological specimens with paraffin section showed fat necrosis, sclerosing fibrosis and inflammatory cells in the mesentery and transmural necrosis of the small bowel wall. This case was diagnosed with MP. The patient did not take immunosuppressive drugs and recovered well after the operation without any digestive discomfort. No recurrence of the MP was observed during 22 months of follow-up.

CASE 2

A 69-year-old female patient was admitted on an emergency basis with a one-day history of acute abdominal pain, distension, anorexia, and general



Figure 1. Ischemic jejunum segments, resected.

weakness. Medical history of this patient included hypertension for eight years. The physical examination showed abdominal tenderness and abdominal distension. Laboratory investigations showed hemoglobin levels at 11.2 g/dl, a white blood cell count of 14,300/mm³, and platelet cell count 280,000/mm³. Bilirubin levels, hepatic and pancreatic enzyme levels and renal function tests were normal. Plain abdominal X-rays showed dilated small intestinal loops with multiple air-fluid levels. Spiral CT scan showed small intestinal dilatation and free fluid in the pelvic region with intraabdominal spread. The patient underwent an exploratory laparotomy in our department in October 2008. Approximately 60 cm of the distal jejunum and proximal ileum showed ischemic condition and partial necrosis, proximal jejunum segments were dilated, and all of the jejunal mesentery was thickened and ischemic. Ischemic and necrotic segments of the jejunum and mesentery were removed. In the histological evaluation, the excised specimen was described as benign adipose tissue with non-specific inflammatory infiltrates, fat necrosis in the mesentery and transmural necrosis of the small bowel wall (Figure 2). The postoperative course was good, and the patient was discharged nine days after the operation. This case was diagnosed as MP. The patient did not take immunosuppressive drugs and recovered well after the operation without any digestive discomfort. No recurrence of the MP was observed during 18 months of follow-up.

CASE 3

A seven-year-old previously healthy boy was admitted to our hospital with severe abdominal pain, abdominal distension and vomiting for about two days. On initial assessment, he had elevated temperature (39.2°C). Distension and tenderness were present upon superficial and deep palpation of the abdomen. Abdominal ultrasound and X-rays showed dilated small intestinal loops with multiple air-fluid levels. Laboratory studies showed hemoglobin level at 14 g/dl, white blood cell count of 35,000/mm³, and platelet cell count of 536,000/mm³. The liver function tests and urinalysis were normal. A laparotomy was performed through a midline incision in our department in October 2008. A jejunal segment of 50 cm showed ischemia with partial necrosis. Ischemic and necrotic segments of the jejunum and mesentery were removed. In the histological evaluation, the mesentery and small intestine showed fat necrosis, sclerosing fibrosis and necrotic bowel wall (Figure 3).

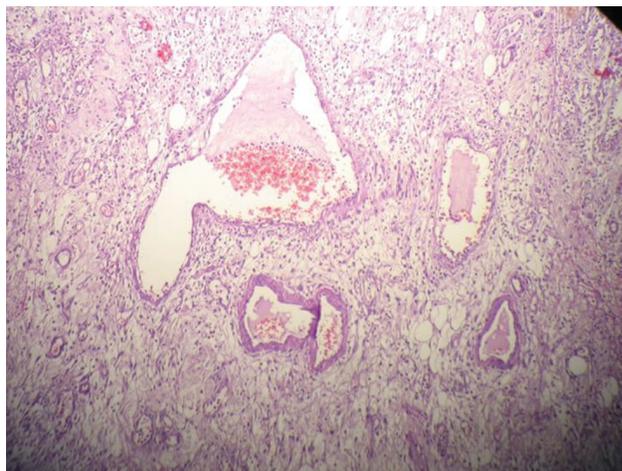


Figure 2. Nonspecific inflammatory infiltrates, fat necrosis in mesentery.

This case was diagnosed with MP. The patient did not take immunosuppressive drugs and recovered well after the operation without any digestive discomfort. No recurrence of the MP was observed during 18 months of follow-up.

DISCUSSION

Mesenteric panniculitis (MP) is a rare disease of unknown etiology that is characterized by idiopathic inflammation and fibrosis of the adipose tissue of the intestinal mesentery (1,3,10,12). The use of drugs, trauma or ischemia of the mesentery, malignancy, autoimmunity, avitaminosis, pancreatitis, and a history of abdominal surgery have been suggested as possible causative factors (1,3,10,12). In our cases, no associated condition could be identified. MP has been reported in the literature using a variety of terms: mesenteric manifestation of Weber-Christian disease, retractile mesenteritis, sclerosing mesenteritis, liposclerotic mesenteritis, and isolated lipodystrophy of the mesentery. Whether all these terms represent histological variants of the same or a related process of a single clinical entity is not entirely clear. In histopathological terms, the preferred terminology is sclerosing mesenteritis. The different terminology used represents the different histological features found, despite the clinical entity being the same (2,6,11-14). The disease is more common in men, with a male/female ratio of 2-3/1, and the incidence increases with age (8,10,15). In over 90% of cases, MP affects predominantly the mesentery of the small intestine (2,10). The disease progresses through three histological stages (13). The first stage is degeneration of mesenteric fat (mesente-

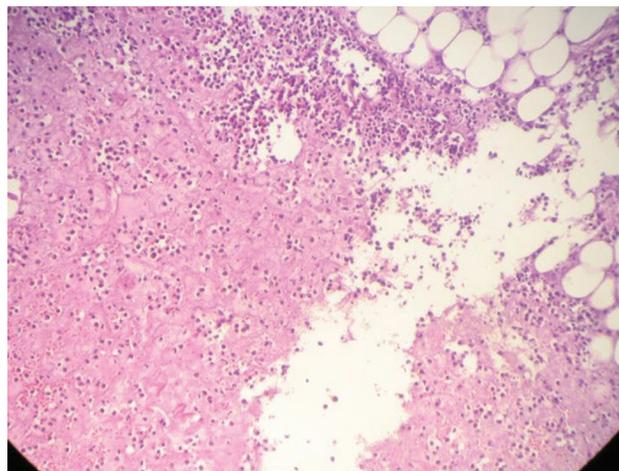


Figure 3. Fat necrosis, sclerosing fibrosis and necrotic bowel wall.

ric lipodystrophy). In this stage, acute inflammatory signs are minimal or non-existent, and the disease tends to be clinically asymptomatic. In the second stage, inflammatory reaction (MP), the most common symptoms include fever, abdominal pain and malaise. The final stage is fibrosis of the adipose tissue (retractile mesenteritis), and in this stage, disease leads to the formation of abdominal masses and obstructive symptoms. In most patients, the conditions consist of a combination of chronic inflammation, fat necrosis and fibrosis (6,7,10,13).

Clinical manifestations of MP are non-specific. The disease is often asymptomatic. The various clinical characteristics include abdominal pain, diarrhea, nausea, vomiting, constipation, anorexia, weight loss, fever, intestinal obstruction or ischemia, ascites, pericardial and pleural effusion, and abdominal mass (3,6-8,10). In our cases, the presentation was complex, with the patient presenting with acute abdomen and then requiring emergency abdominal surgery. Diagnosis of MP may be complex and difficult. Because MP is a very rare condition, special clinical manifestations and typical signs are lacking. The laboratory findings are mostly unhelpful in the diagnosis, and radiological features are non-specific (3,6,9,14). Therefore, MP can be misdiagnosed easily not only by surgeons and radiologists, but also by pathologists (1). In addition, biopsy and histological confirmation may be necessary for a definitive diagnosis (5,6,10,13). The radiological features are non-specific. Infectious, ischemic, neoplastic, and other inflammatory situations may give rise to similar findings. MP has been best diagnosed radiologically with CT

scan and magnetic resonance imaging (MRI) (5-7). MP usually appears as a soft tissue density in the base of the small bowel mesentery, and the CT features of this disease correlate well with pathologic findings (7,10,11). One of our patients had been examined with CT scan but there was no sign about the mesentery.

Our three cases showed different presentations, and the MP diagnosis was made postoperatively in all patients. Although the disease has a chronic nature, there was an acute condition requiring emergent surgery in our patients. All patients underwent segmental small bowel resection because of ischemia and necrosis of the small bowel and mesentery. There had been no mass causing obstruction and necrosis, and all patients were diagnosed as MP based on histopathological examination.

In conclusion, MP is a non-specific, predominantly benign inflammatory process usually involving the mesentery of the small intestine. MP is a rare disease that occurs independently or in association with other diseases. On gross examination, the

alterations may be mistaken for neoplastic or ischemic processes. Diagnosis of this non-specific, benign inflammatory disease is a challenge to gastroenterologists, radiologists, surgeons, and pathologists. The frequency of disease might be higher than reported. If the inflammatory process has an aggressive course in MP, it will occasionally result in a fatal outcome. Nevertheless, it usually has a benign course and a favorable outcome. Approximately 50% of the patients might not require any treatment, and those with non-obstructive or non-ischemic symptoms might benefit from anti-inflammatory or immunosuppressive agents. Intestinal ischemia or intestinal obstruction caused by MP may require laparotomy. When the disease is found intraoperatively, a frozen section study is warranted. Because the natural history of MP is usually benign, a radical resection is unjustified. When the advanced inflammatory changes become irreversible, especially in the case of bowel obstruction or ischemia, we recommend partial resection. Overall prognosis is usually good and recurrence seems to be rare.

REFERENCES

- Gu GL, Wang SL, Wei XM, et al. Sclerosing mesenteritis as a rare cause of abdominal pain and intraabdominal mass: a cases report. *Cases J* 2008; 1: 242.
- Popkharitov AI, Chomov GN. Mesenteric panniculitis of the sigmoid colon: a case report and review of the literature. *J Med Case Reports* 2007; 1: 108.
- Zafar MA, Rauf MA, Chawla T, et al. Mesenteric panniculitis with pedal edema in a 33-year-old Pakistani man: a case report and literature review. *J Med Case Reports* 2008; 2: 365.
- Daskalogiananki M, Voloudaki A, Prassopoulos P, et al. CT evaluation of mesenteric panniculitis. *AJR* 2000; 174: 427-31.
- Azzam I, Croitoru S, Jochanan E, et al. Sclerosing mesenteritis: a diagnostic challenge. *IMAJ* 2004; 6: 567-8.
- Chawla S, Yalamarathi S, Shaikh IA, et al. An unusual presentation of sclerosing mesenteritis as pneumoperitoneum: case report with a review of the literature. *World J Gastroenterol* 2009; 15: 117-20.
- Horton KM, Lawler LP, Fishman EK. CT findings in sclerosing mesenteritis (panniculitis): spectrum of disease. *RadioGraphics* 2003; 23: 1561-7.
- Akram S, Pardi DS, Schaffner JA, et al. Sclerosing mesenteritis: clinical features, treatment, and outcome in ninety-two patients. *Clin Gastroenterol Hepatol* 2007; 5: 589-96.
- Vettoretto N, Diana DR, Poiatti R, et al. Occasional finding of mesenteric lipodystrophy during laparoscopy: a difficult diagnosis. *World J Gastroenterol* 2007; 13: 5394-6.
- Issa I, Baydoun H. Mesenteric panniculitis: various presentations and treatment regimens. *World J Gastroenterol* 2009; 15: 3827-30.
- Sabate JM, Torrubia S, Maideu J, et al. Sclerosing mesenteritis: imaging findings in 17 patients. *AJR* 1999; 172: 625-9.
- Kapsoritakis AN, Rizos CD, Delikoukos S, et al. Retractable mesenteritis presenting with malabsorption syndrome. Successful treatment with oral pentoxifylline. *J Gastrointest Liver Dis* 2008; 17: 91-4.
- Patel N, Saleeb SF, Teplick SK. Cases of the day. *RadioGraphics* 1999; 19: 1083-5.
- Ogden WW, Bradburn DM, Rives JD. Mesenteric panniculitis: review of 27 cases. *Ann Surg* 1965; 161: 864-73.
- Ferrari TCA, Couto CM, Vilaça TS, et al. An unusual presentation of mesenteric panniculitis. *Clinics (Sao Paulo)* 2008; 63: 843-4.