Intestinal obstruction caused by mesenteric fat necrosis masquerading as small bowel malignancy

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Retractile mesenteritis had been described a century ago. However, the manifestations are variable and the diagnosis is difficult. We report a case presenting with a subacute intestinal obstruction. In conclusion, surgeons should add this variety in their differential diagnosis of bowel obstruction.

Keywords:
lipodystrophy, mesenteritis, panniculitis, sclerosis, small bowel obstruction

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Background

Mesenteric fat necrosis is a part of a larger disease spectrum called collectively as mesenteric sclerosis. It was first described in 1924 by the name retractile mesenteritis [1]. It mainly affects the mesentery of the small bowel, although it is claimed to involve the large bowel, especially the sigmoid mesentery, more frequently in Japanese [2].

Actually, the disease passes by three major stages: stage I (lipodystrophy), characterized by fat necrosis; stage II (panniculitis), characterized by a chronic inflammatory process; and finally stage III (retractile mesenteritis), characterized by extensive fibrosis and mass formation [3].

The disorder was considered by some authors as an IgG4-related disease or mimic, because of the associated high serum levels of the immunoglobulin and its presence within the inflammatory process [4].

Herein, we, up to our knowledge, describe the first case from Egypt, and the second from the Arab countries, with this rare disease manifesting by obstructive symptoms.

Case presentation

A 69-year-old woman with a recently discovered hypertension and dyslipidemia presented with a long history of abdominal discomfort and vomiting, but normally passing flatus and stool. She had a previous admission 1 month ago at an emergency hospital because of recurrent attacks of severe vomiting, where it was treated conservatively. She had no known allergies, nor significant family history, and a review of her systems was unremarkable.

Upon physical examination, the patient was obese (BMI: 35), in no acute distress, and had stable vital signs. She had a distended and tympanic abdomen with tinkling bowel sounds.

Laboratory data revealed a normal complete blood count, blood chemistry, and coagulation profile. She was referred for an outpatient colonoscopy, which passed up to the cecum, and revealed just a benign polypoidal lesion near the splenic flexure, which was excised and confirmed histopathologically. Computed tomography (CT) of the abdomen was performed using a slice thickness of 5 mm after oral and intravenous contrast administration. CT showed a diffuse thickening of small intestinal loops, which is associated with haziness of the surrounding fat planes, forming an exophytic mass lesion of 6.6×5 cm^2, query inflammatory or neoplastic, and an enlarged fatty liver. The proximal intestinal loops showed a moderate dilatation (Fig. 1).

Midline exploratory incision revealed a mass in the mesentery of the small bowel (ileum) with no evidence of hematoma or infarction (Fig. 2). There was moderate distension of the proximal intestinal loops. Segmental intestinal resection with primary anastomosis was performed, and the patient was discharged home 4 days later.

Grossly, the specimen consisted of 35 cm of small intestine excised with a single greyish yellow mass at

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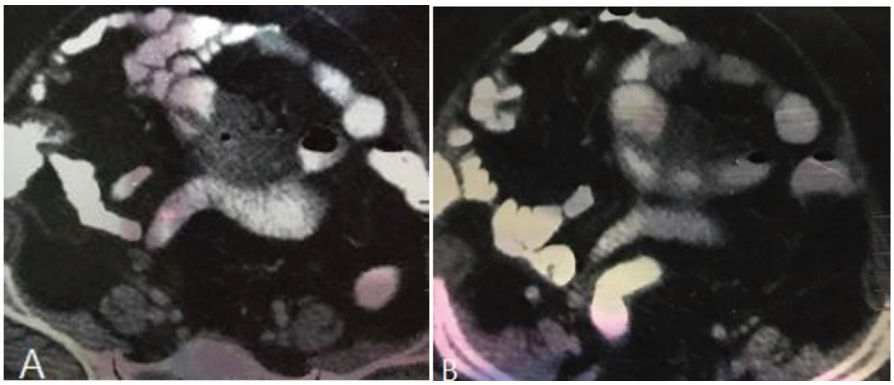
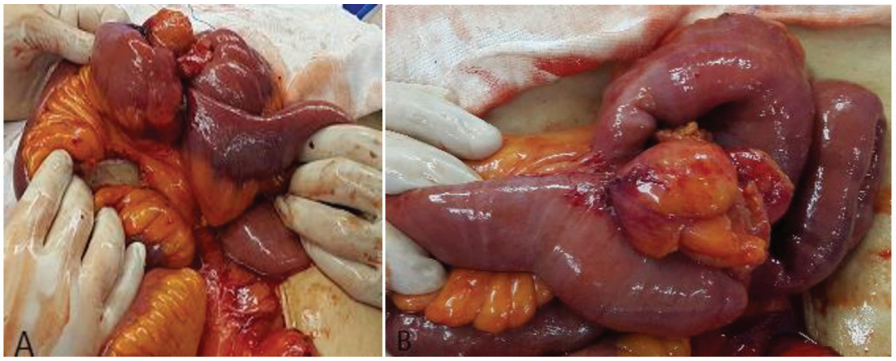
Figure 1



A transverse section of contrast computed tomography, (A) Showing a small intestinal ill-defined mass with surrounding haziness (B) Intestinal mass protruding through a small abdominal wall defect

Figure 2



The small intestinal mass as seen in exploration (A) Side view (B) Anterior view

the mesenteric side measuring 5×4×4 cm^3 compressing the intestinal wall with fibrous adhesion. Multiple mesenteric nodes, greyish yellow in color, were also seen. Microscopic examination revealed fat cells separated by fibrous septa (Fig. 3). Sections prepared from the mesenteric nodules revealed similar picture. Two lymph nodes showed a reactive hyperplasia. Final diagnosis was intestinal obstruction by mesenteric fat necrosis with fibrous adhesion.

Discussion

Sclerosing mesenteritis is a chronic, rare nonspecific inflammatory disease of adipose tissue in the intestinal mesentery with unrivalled criteria [5]. Although there is scarce disease description in Arab countries and Africa, Hammoud *et al.* [6] previously reported three cases from Lebanon, and Madubogwu [7] reported a case in Nigeria.

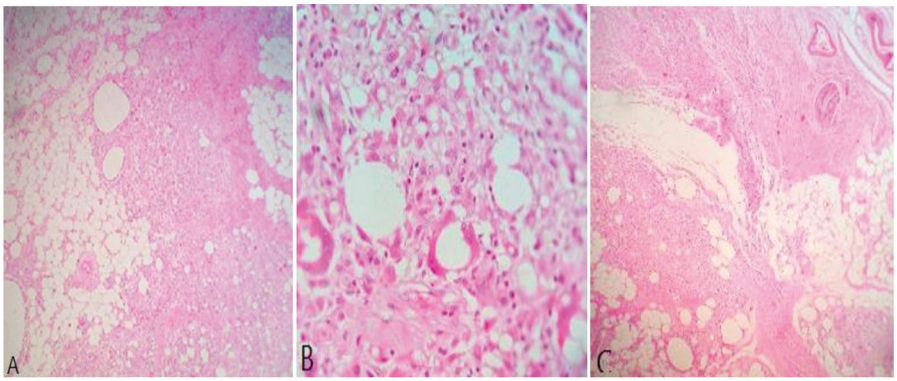
Association with previous surgery, trauma, autoimmune disease, and ischemic injury was frequently reported [8]. Other scholars had related the disease to glucose intolerance, but in a small series [9]. In two separate case reports and one case series, the disease was associated with Sjogren disease [10,11], one of them with multiple disease focuses [12]. In our case, none of the above association was detected. However, the only significant, may be related, disorder was dyslipidemia with the associated diffuse fatty infiltration of the liver.

The relation of the disease and malignancy (being a paraneoplastic syndrome), especially lymphoma, gastrointestinal tract adenocarcinoma, lung carcinoma, and prostatic carcinoma, was described [13,14]. Actual causation and the need for longer follow-up of those patients are still unclear.

The disease usually affects men in the 6th decade of life [15], in contrary to our patient, who is a female and a decade elder.

The disease diagnosis is another dilemma, and in many cases, as in our patient, it is impossible to obtain the diagnosis preoperatively. Mesenteric panniculitis is usually asymptomatic and discovered incidentally. If

Figure 3



Microscopic examination showing (A) Fat necrosis, ruptured fat cells with foam, macrophage and fibrosis (H&E X 40) (B) Ruptured fat cells with foam, macrphages and giant cells (H&E X 400) and (C) Fat cells variable in size and shape with intervening histiocytes, foreign body giant cell reaction, and areas of dense fibrosis (H&E X40)

symptomatic, patients may present with abdominal tenderness, a palpable mass, may be with systemic manifestations such as pain, fever, weight loss, and bowel disturbance of variable duration. Laboratory findings may include elevation in erythrocyte sedimentation rate, neutrophilia, and anemia [16,17]. However, radiologic signs were described, including fat ring encircling the mesenteric vessels and tumor pseudocapsule [3].

The disease is relatively indolent, with slow progression, and usually self-limited [8]. However, some authors documented that up to 20% had an aggressive pattern, which may be fatal [18].

Treatment of the disease seems mainly medical, unless obstruction, bleeding, or advanced chronic disease supervenes [15]. Otherwise, the main role of surgery is to biopsy the lesions to confirm the radiologic diagnosis. Drugs used in the therapy are Colchicine, Prednisolone, Tamoxifene, and Pentoxyphiline [8]. Some claim Prednisolone to be the first choice in case inflammatory symptoms dominate [19].

However, others claim the presence of the disorder as a part of Weber-Christian disease being associated with worse response to corticosteroids [12]. In our patient, the subacute intestinal obstructive symptoms, plus the uncertain preoperative diagnosis, made the surgical intervention as the only suitable treatment option. Afterwards, the patient had significantly improved symptoms.

Conclusion

Sclerosing mesentritis is a rare, poorly understood disease that may present with intestinal obstruction. The orientation of this entity among radiologist and surgeons may obviate the need for surgery in uncomplicated cases.

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Conflicts of interest

There are no conflicts of interest.

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