

CASE REPORT

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Radiological manifestations of benign mesenteric lipoma that presented with acute intestinal obstruction: A case report

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Abstract

Background: Intestinal obstruction is a common surgical emergency that is presented to the hospital with various aetiologies. Among all, mesenteric lipoma is one of the uncommon extraluminal causes of intestinal obstruction. In such conditions, bowel volvulus, compression or even adhesion are the underlying pathologies.

Case presentation: We report a 69-year-old gentleman who presented with a triad of intestinal obstruction which required exploratory laparotomy. Preoperative computed tomography revealed multiple coalescing lobulated hypoattenuating lesions encircling part of a small bowel forming transitional zone. These lesions are comparatively more hypoattenuating in comparison with the surrounding mesenteric fat. Intraoperatively, a giant ileal mesenteric lipoma was identified causing compression and folding to the adjacent small bowel, leading to proximal bowel dilatation. Excision of the lipoma with a few mesenteric lymphadenectomy was done, revealing a benign mesenteric lipoma and reactive lymph nodes. Despite ileus, he made a good postoperative recovery and was discharged well.

Conclusions: Patients with recurrent abdominal pain must have a thorough endoscopic and imaging assessment. Besides common or malignant aetiology, rarities should be considered and actively sought. Mesenteric lipoma is a relatively indolent tumour for which early detection can alter clinical presentation.

Keywords: Atypical lipoma, Case report, Computed tomography, Intestinal obstruction

Background

Lipoma is a common benign tumour most frequently encountered as subcutaneous swellings, they rarely occur in deep-seated areas such as intrathoracic, intraperitoneal, retroperitoneal and paratesticular. Mesenteric lipoma is a rare example of intraperitoneal lipoma. Mesenteric lipoma is infrequently encountered benign tumours consisting of mature adipose tissue. There are scanty descriptions of this pathology in English literature so far [1–4]. They are more common in those aged above the age of 40 years old, with diabetes mellitus, hyperlipidaemia, trauma, radiation history, obesity and

chromosomal translocation [5]. Most mesenteric lipomas are asymptomatic but larger lesions tend to display symptoms [2]. Hereby, we report a rare case of adult small bowel obstruction due to mesenteric lipoma.

Case presentation

A 69-year-old gentleman presented with abdominal pain and distension for 4 days, associated with vomiting and no bowel opening. He has underlying diabetes mellitus, hypertension and chronic kidney disease. He has no family history of malignancy. He had an upper and lower endoscopy 3 years ago for a similar problem which revealed no significant findings. Upon examination, the abdomen was distended but no palpable mass. There was no mass on the digital rectal examination. The biochemical examinations were unremarkable. Abdominal radiograph in a supine position (Fig. 1) showed a centrally

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Fig. 1 Abdominal radiograph in supine position showing small bowel dilatation (yellow arrow) with non-dilated large bowels

distributed small bowel dilatation with prominent valvulae conniventes. The large bowels are not dilated. There is no abnormally located air suggesting pneumatosis intestinalis or pneumothorax. Post-contrast computed tomography (CT) scan of the abdomen in axial (Fig. 2A) and sagittal (Fig. 2B) view revealed multiple coalescing lobulated hypoattenuating lesions encircling part of

a small bowel forming transitional zone. The proximal small bowel loops are dilated with complete collapsed distal small and large bowel loops. These lesions are comparatively more hypoattenuating in comparison with the surrounding mesenteric fat. There was no calcification, septations or significant contrast enhancement of these lesions.

He then underwent exploratory laparotomy whereby the cause of obstruction was identified as a mesenteric lipoma (Fig. 3A) about 110 cm from the ligament of Treitz, measuring 8 × 4 cm (Fig. 3B) at the ileal mesentery causing compression and folding of the adjacent small bowel. There was however no luminal narrowing. The lipoma was excised and the mesenteric defect closed with absorbable sutures. Few enlarged mesenteric lymph nodes were excised for histopathology. He recovered despite the initial postoperative ileus and was discharged well. Histology assessment revealed a benign lipoma and reactive lymph nodes. He was discharged from our clinic follow-up in two subsequent visits after having good postoperative recovery.

Discussion

Mesenteric lipoma is a rare example of intraperitoneal lipoma. As they do not infiltrate the bowel lumen, most of these lesions are asymptomatic. However, increasing the size of the mass can lead to recurrent abdominal pain. They may present in the acute setting with intestinal obstruction owing to bowel volvulus, compression or even adhesion [6, 7]. As in our case, the patient had a classic triad of intestinal obstruction secondary to mesenteric lipoma. In fact, intestinal obstruction also can occur in intramural lipoma. In this rare circumstance,

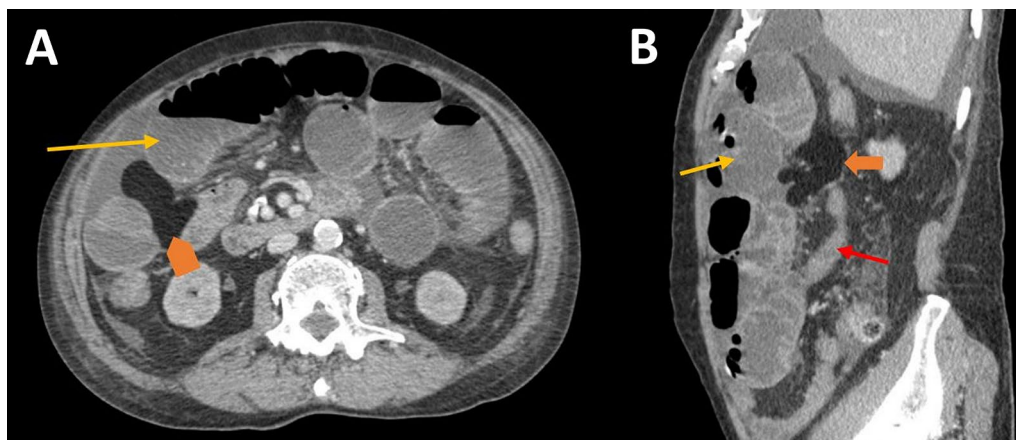
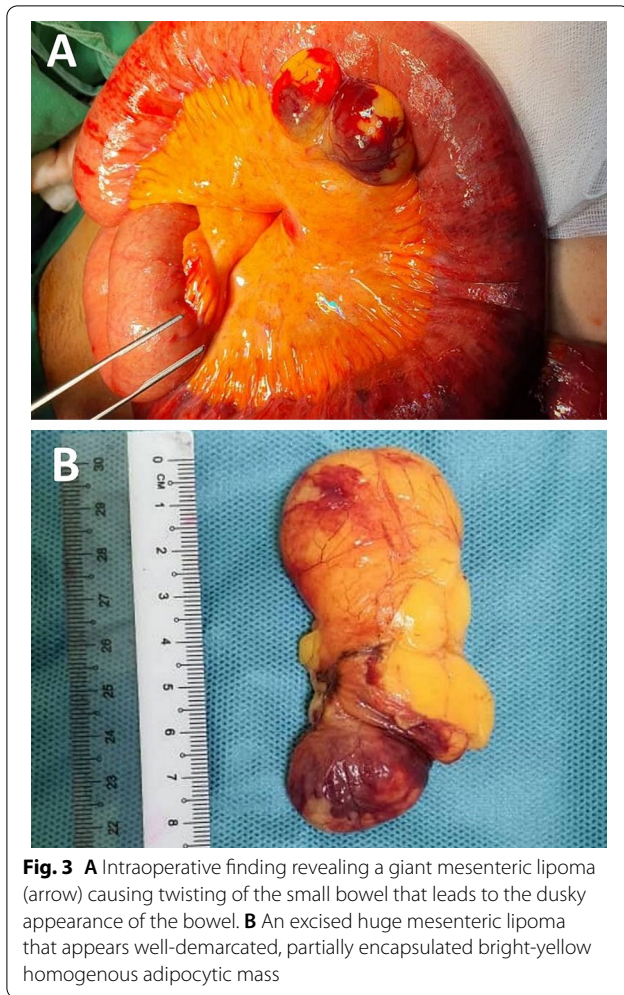


Fig. 2 Post-contrast CT scan of the abdomen in **A** axial, **B** sagittal view showing multiple coalescing lobulated extraluminal lesions (orange arrow) encircling part of a small bowel, which is comparatively more hypoattenuating in comparison with the surrounding mesenteric and subcutaneous fat, forming transitional zone. The proximal small bowel loops are dilated (yellow arrow) with completely collapsed distal small (red arrow) and large bowel loops



the patient will develop intestinal obstruction secondary to intussusception, in which the lead point will be the intramural lipoma [4].

A radiographic examination may help identify the mesenteric lipoma in the presence of the intestinal obstruction, likely due to the discrepancy of contrast in between air within the dilated bowels and lipoma, where the air is more radiolucent than fat [5, 8]. Nevertheless, an abdominal radiograph should continue to be the initial imaging investigation for suspected intestinal obstruction due to ease of accessibility and cheaper cost. It is highly sensitive in detecting intestinal obstruction, abnormally located air such as pneumoperitoneum or pneumatosis intestinalis, as well as obstructing intraluminal pathology such as foreign bodies [9, 10]. Radiographs are sensitive in detecting small bowel obstruction ranging from 59 to 93% [11]. We were able to determine the small bowel obstruction in our case but unfortunately unable to determine the cause of obstruction.

Ultrasound abdomen is recommended by some writers as the primary imaging investigation, however with the risk of misinterpretation of a mesenteric lipoma as normal-appearing mesenteric fat and omental tissue [12]. Most writers are attributing CT scan as the best diagnostic imaging modality which assists in diagnosing mesenteric lipoma [5, 13]. The differences of contrast between the lipoma and normal-appearing mesenteric fat due to radiographic attenuation discrepancy enable the radiologist to locate the lesion. This radiographic attenuation discrepancy is described as Hounsfield unit (HU) widely used in computed tomography images [8]. Simple lipoma typically appears as a mass of homogenous adipose tissue with similar attenuation to subcutaneous fat between -80 and -120 HU. Unlike angiomyolipoma, these lesions are not contrast-enhancing [13]. Complications caused by extraluminal tumours, such as volvulus, which would demonstrate the typical "vortex" pattern [14]. Besides that, a CT scan enables further characterisation of the lesion, which may assist in the diagnosis of liposarcoma, where liposarcoma may demonstrate heterogeneity, adjacent structure infiltration and local aggressiveness [15]. However, magnetic resonance imaging (MRI) plays a main role in differentiating benign from malignant lipomas, especially in a giant type [12]. Another important differential is liposarcoma which appears less hypodense and has thicker septation [16]. Other than that, MRI also has difficulties to differentiate between lipoma and mature teratoma that contains fatty components [17].

Surgical intervention is indicated with symptomatic or obstructed patients. There, however, is no consensus on the treatment of incidental fat attenuating intraperitoneal masses. Laparoscopic approach with resection is the preferred option especially among small lipoma and non-obstructed bowel as compared to the conventional open surgery for the bigger tumour with intestinal obstruction, as in our case [7]. Radioimaging cannot conclusively rule out malignancy. In cases with multiple lesions, careful assessment of each lesion is vital. Lipomas generally display low malignant potential, and decisions for surgery should be thoroughly discussed with asymptomatic patients. Surgical intervention should aim for complete excision especially for larger lesions due to the risk of malignancy, besides preventing recurrence [18].

Conclusions

Patients with recurrent abdominal pain must have a thorough endoscopic and radio imaging assessment. Besides common or malignant aetiology, rarities should be considered and actively sought. Mesenteric lipoma is a relatively indolent tumour for which early detection can alter clinical presentation.

Abbreviations

CT: Computed tomography; MRI: Magnetic resonance imaging.

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Authors' contributions

DEYG involved in substantial contributions to the manuscript draft, and analysis of the data and interpretation. WWT involved in substantial contributions to the conception provided and revision of the manuscript. TDS involved in substantial contributions to the manuscript draft, and analysis of the data and interpretation. CYN involved in substantial contributions to the conception provided, design of the work, interpretation of the data, and substantial revision of the manuscript. FH involved in substantial contributions to the conception provided, design of the work, and interpretation of the data. All authors read and approved the final manuscript.

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Availability of data and materials

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate

The patient included in this study provided the written informed consent to participate in this research.

Consent for publication

The patient included in this research gave a written and informed consent to publish the data contained within this study.

Competing interests

The authors declare that they have no competing interests.

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