# Mesenteric cyst causing strangulated internal hernia

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Mesenteric cysts are rare and may present as acute abdomen with difficult preoperative diagnosis. Acute symptoms may warrant an emergency laparotomy with bowel resection and anastomosis. We present a 17-year-old male with a complicated mesenteric cyst.

**Keywords:**
bowel gangrene, internal hernia, mesenteric cyst

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## Introduction

Mesenteric cysts are intra-abdominal benign tumors that are rare, occurring in about one in 100 000 adults and one in 20 000 children [1].

Though, it may occur anywhere along the bowel from the duodenum to the rectum, about two-thirds of mesenteric cysts occur in the small bowel [2,3]. The presentation of a mesenteric cyst is like any other abdominal pathology, making the diagnosis a challenging one preoperatively [4]. Clinical presentations may vary from being asymptomatic to a severely ill patient presenting with complications such as intestinal obstruction, volvulus, bowel gangrene, peritonitis, and death [3,5]. Complete excision of the cyst is the management of choice [6]. However, partial excision and marsupialization may be done as a form of treatment.

This is a case report of a 17-year-old male who presented with acute abdomen and features of intestinal obstruction and was managed as an emergency successfully.

## Case report

A 17-year-old male with 3 days history of abdominal pain that started in the central abdomen, initially colicky and then became generalized about 36 h after the onset of pain. He had multiple episodes of bilious and projectile vomiting. Clinical examination showed an acutely ill-looking young man with abdominal distension, generalized tenderness with guarding, and rebound.

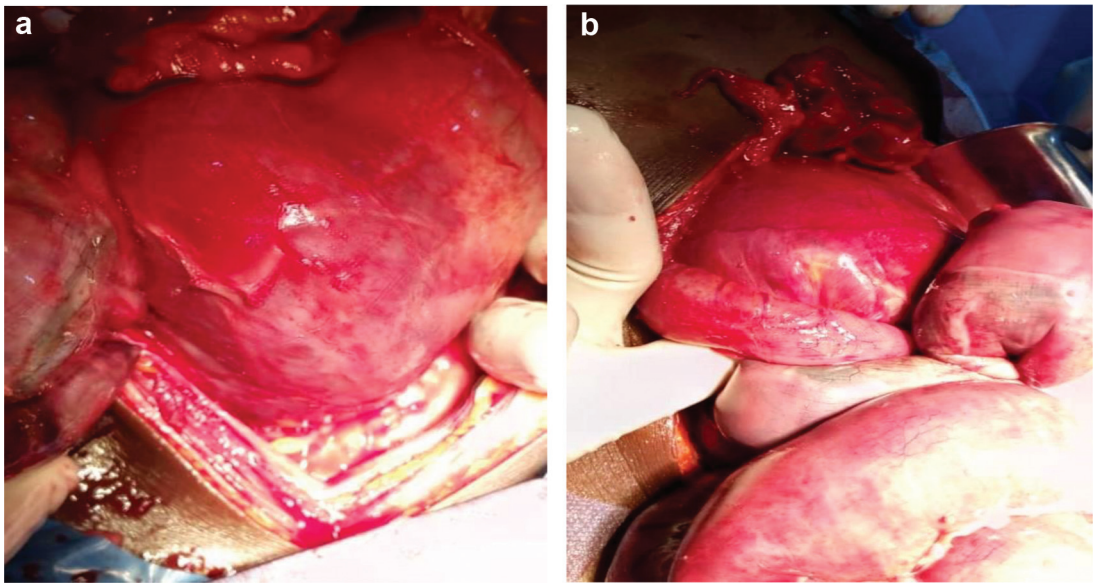
Routine hematological and biochemical investigations were essentially normal except for hyponatremia (120 mmol/l), abdominal ultrasound showed a massive intraperitoneal fluid collection with dilated, aperistaltic bowel loops. Erect plain abdominal radiography showed dilated small bowel loops with multiple air-fluid levels (Fig. 1).

He had an emergency laparotomy through a midline incision, there was moderate volume serosanguinous

**Figure 1**

Erect plain abdominal radiography.

**Figure 2**




Intraoperative images of the cyst (a), herniation with gangrenous bowel (b), gangrenous segment of the terminal Ileum.

peritoneal fluid and also a cystic mass in the central abdomen (Fig. 2a) with a mouth through which part of the jejunum herniated with a volvulus and a gangrenous segment of the terminal Ileum (Fig. 2b).

The gangrenous ileum extended from about 15 cm from the ileocecal junction, spanning about 170 cm proximally. The cyst was resected together with the gangrenous portion of the bowel and bowel continuity was restored with an ileo–ileal anastomosis. The postoperative recovery was uneventful, and the patient was discharged on postoperative day ten. Histology showed the cyst to be a simple mesothelial cyst.

## Discussion

The occurrence of mesenteric cysts is rare, and the etiology of its development is unknown. There are, however, many theories suggesting developmental anomalies as their cause [3,4,7]. The most accepted theory (proposed by Gross) is that cysts result from the benign proliferation of ectopic lymphatic tissue in the mesentery that fails to communicate with the remainder of the lymphatic system [8].

The clinical presentation varies from a patient being asymptomatic, in which case, it may be an incidental finding on ultrasound, to the patient having an acute abdomen with features of intestinal obstruction [9] as we found in our patient. The lack of specific symptoms may not be unconnected to the rarity of its occurrence. This, therefore, makes preoperative diagnosis difficult based on clinical presentation [10].

Preoperative abdominal ultrasound and computed tomography (CT) scan are commonly used to make diagnosis [11]. However, magnetic resonance imaging may be more accurate in delineating the origin, composition, size, and relationship of the mesenteric cyst with surrounding soft tissues [12].

Even though abdominal ultrasound may show a multiloculation of the cystic mass, and estimate the volume of the content [13] in our patient, the findings on ultrasound were not specific; it showed dilated bowel loops with massive intraperitoneal fluid collection possibly due to complications from the cyst.

Our patient had herniation of the proximal small bowel into the cyst with subsequent intestinal obstruction from volvulus causing bowel gangrene and subsequent peritonitis. Though these complications are not common, they may lead to shock, hemorrhage, and eventually death [14], if intervention is not prompt.

In the management of mesenteric cysts, complete excision is the preferred treatment, and this can be achieved by both laparoscopy and laparotomy [15–17]. The index patient had a laparotomy done. Though conservative management followed by elective surgery has been documented in acute presentations in a fairly stable patient [17], this was not attempted in our patient due to the increasing abdominal distension

and peritonitis. Resection and anastomosis of the bowel as in this case may be necessary, this is however, commonly performed in children with mesenteric cysts. [18].

## Conclusion

Due to the rarity of pathognomonic symptoms, mesenteric cysts should be suspected in cases of acute abdomen. The treatment of choice remains complete excision of the cyst, which may be accompanied by bowel resection and anastomosis in cases where the cyst is adherent to the bowel or where there are nonviable portions of the bowel.

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### Conflicts of interest

There are no conflicts of interest.

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