

Mesenteric cyst as inguinal hernia, should we do more?

Abstract

Introduction

Mesenteric cysts are rare cystic structures found in the mesentery of the bowels, spanning from the duodenum to the colon and even into the retroperitoneum. They are infrequently encountered, with incidence rates varying from 1 in 20,000 to 1 in 350,000 hospital admissions. These cysts were first observed in the 16th century and can present with a range of clinical symptoms, from palpable abdominal masses to acute issues. A specific diagnostic feature, known as Tillaux's triad, includes the signs of a central abdominal cystic mass, the mass moving perpendicularly to its origin, and a band of resonance on percussion surrounding the cyst.

Case report

This report details a case of an incidental finding of a mesenteric cyst that initially presented as an irreducible right inguinal hernia in a one-year-old boy. The cyst was discovered during surgery and required laparotomy, cyst resection, and re-anastomosis of the intestines. Post-surgery, the child recovered well, and histopathology confirmed the diagnosis as a mesenteric cyst.

Conclusion

Mesenteric cysts can have diverse presentations, and they should be considered as a potential cause of inguinal hernias in pediatric patients. Surgical excision with or without bowel resection is the standard treatment with favorable outcomes. The case underscores the importance of considering mesenteric cysts in the differential diagnosis of pediatric inguinal hernias.

Key word: Mesenteric cysts, inguinal hernias

Introduction

The presence of cystic-like structures in the mesentery of the bowels, extending from the duodenum to the colon and, surprisingly, into the retroperitoneum, is referred to as a mesenteric cyst (1). This condition is exceedingly rare, with an incidence reported as 1 in 20,000 of all pediatric admissions (1), though some reports suggest even rarer occurrences, with rates of 1 in 200,000 to 350,000 hospital admissions (2). The first documented case dates back to 1507 when the Italian anatomist Benevienni observed it during an autopsy of an 8-year-old boy, and the first operation was conducted by the French surgeon Tillaux in 1880 (2). Clinical presentations can vary from a palpable abdominal mass to acute, life-threatening symptoms. Tillaux's triad, named after the French surgeon, consists of signs such as a central abdominal cystic mass, the mass moving perpendicularly to the cyst's origin, and a band of resonance upon percussion around the cyst, which can aid in diagnosing mesenteric cysts (3).

Case presentation

We would like to report a case involving the incidental discovery of a mesenteric cyst that presented as an irreducible right inguinal hernia in a 1-year-and-1-month-old boy, who was initially referred to us from a district hospital. The child was delivered via spontaneous vaginal delivery at 35 weeks. The antenatal period was uneventful, but he had a history of neonatal jaundice and experienced a febrile seizure at 8 months of age. Otherwise, his development was age-appropriate, and he was thriving. At the time of the referral from the district hospital, the mother noticed right scrotal swelling that had been increasing in size for two days. However, he did not experience vomiting or abdominal pain, and his bowel movements were regular, along with oral intake. During the clinical examination, his abdomen was soft and non-tender, but right inguinal swelling, which was irreducible, was noted. He was initially diagnosed with a right irreducible inguinal hernia, and his condition was explained to his parents. Preoperative counselling was conducted, and he was prepared for laparoscopic herniotomy.

During the surgery, upon entering the peritoneum, multiple cystic lesions were observed originating from the mesentery of the descending and sigmoid colon (see Figure 1). The mesentery seemed to be extending into the deep inguinal ring. An attempt was made to extract the cyst from the processus vaginalis, but this attempt failed (see Figure 2). While maneuvering, the cyst ruptured, causing the release of hemoserous fluid into the abdomen. Consequently, the decision was made to proceed with a laparotomy. Further evaluation revealed that the cyst wall was adhered to the cecum, the mesentery of the small bowel, the right lateral peritoneal wall, and a portion of the processus vaginalis. The adhesions were carefully released, and a section of the descending colon and sigmoid colon was resected, followed by a primary anastomosis (as depicted in Figure 3). Additionally, a right herniotomy was performed, as it was impossible to separate the cyst from the processus vaginalis. The vas deferens and blood vessels were preserved, and the small bowel, cecum, appendix, transverse and ascending colon, as well as bilateral ureters, were found to be normal.

Postoperatively, the child recovered well in the ward with no active issues. He was seen in the follow-up clinic and was in good health. His histopathological report confirmed the presence of a mesenteric cyst.

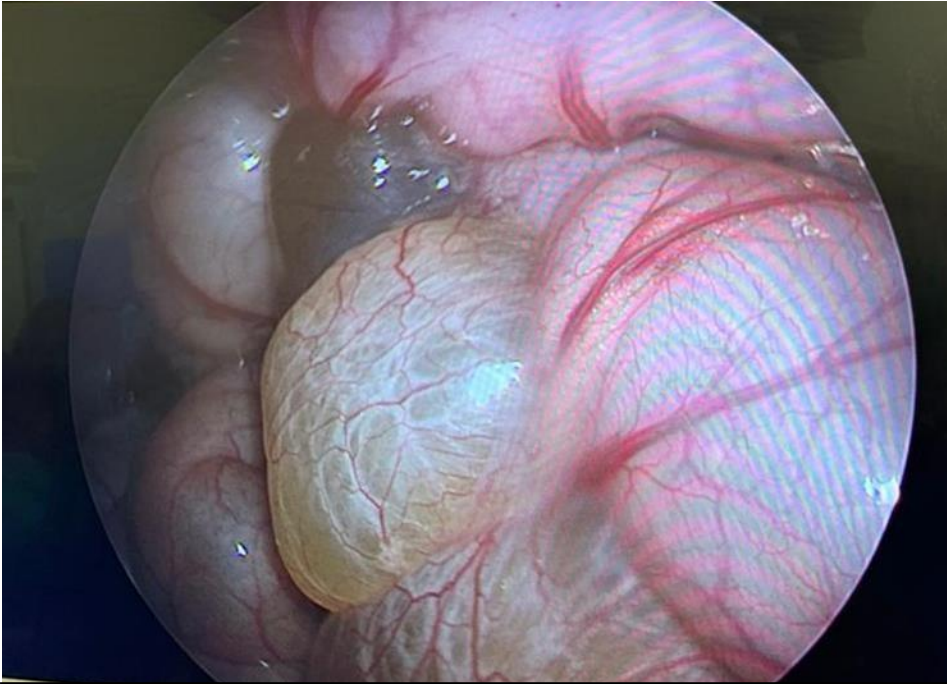


Figure1:Multiplemesentericcystuponenteringperitoneum

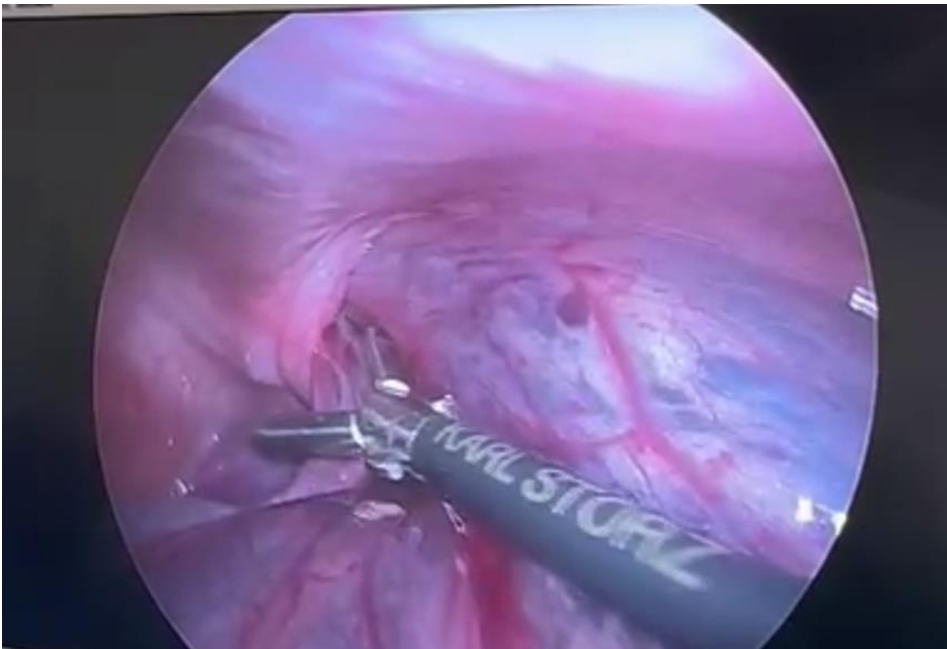


Figure2:Mesentericcystatrightdeepinguinalring

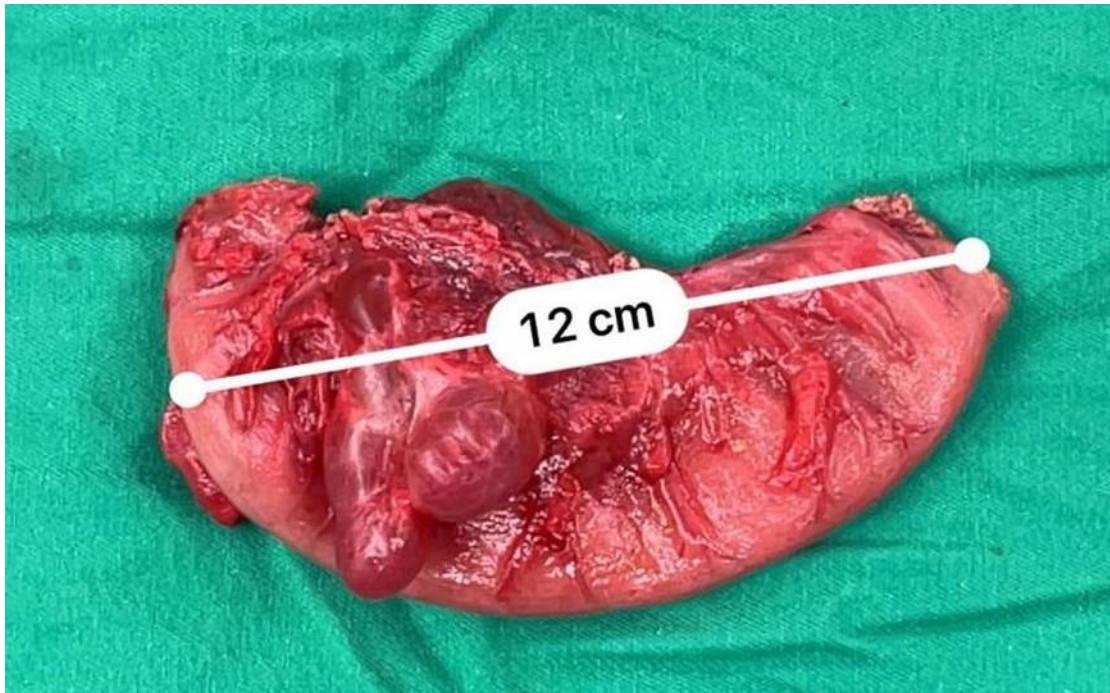


Figure 3: The resected part of descending colon and sigmoid colon with mesenteric cyst

Discussion

Inguinal hernia is a common clinical diagnosis in the pediatric population, being six times more common in boys, with an incidence rate of around 1-5% in full-term babies. While right-sided inguinal hernia is three times more common than left-sided, bilateral inguinal hernias are more prevalent in premature infants. Approximately 99% of inguinal hernias are of the indirect type (4). The etiology of pediatric inguinal hernias differs from the adult presentation. During development, the outpouching of the peritoneum, known as the processus vaginalis, forms when the testes descend into the scrotum. This processus vaginalis can remain patent and not close off, resulting in the formation of an inguinal hernia through which the contents of the intraabdominal cavity, particularly the bowel, can herniate (4). Despite these differences in etiology compared to adults, the standard treatment for hernias remains surgical intervention. The hernia contents can be similar to adult presentations, including omentum, bowel, or, as in our case, rarely, a mesenteric cyst.

Fernández and Ricketts discussed that mesenteric cysts might result from the proliferation of ectopic lymphatic tissue in the mesentery, which lacks communication with the rest of the lymphatic system (5,6). Morphologically, they can be classified into four types: type 1 (pediculate), type 2 (sessile), type 3 (extending into the retroperitoneum), and type 4 (multicentric). While type 1 is easily resected, type 2 may require bowel resection, type 3 is not completely resectable, and type 4 may necessitate multiple surgeries (7,8,9,10).

Mesenteric cysts are often incidental findings rather than being presented with symptoms. The symptoms of presentation can be diverse, depending on the origin and size of the cyst, as well as whether any complications have occurred. They can manifest as acute or chronic vague abdominal pain (81%), a palpable mass (61%), nausea and vomiting (45%), constipation (27%), or diarrhea (6%) (11). In the case of our mesenteric cyst, it presented as an irreducible inguinal hernia, a rare occurrence which has been reported in the literature. Obaidah et al. reported a similar case of a mesenteric cyst presenting as an inguinal hernia in 2012 (12). According to his report, excluding his

case, there were only five cases of mesenteric cysts presenting as inguinal hernias documented in English literature from 1964 to 1998 (12). A more recent report of mesenteric cyst presentation as an inguinal hernia was reported in 2021 by Lokavarapu et al in a 50-year-old male. He documented that the patient came with a sudden onset of abdominal pain and swelling over the right groin, which mimicked an obstructed inguinal hernia (13). Vanek et al. and Prakash et al. stated that the most common site for mesenteric cysts is the small intestine, followed by the colon and the retroperitoneum. Only 15%-18% of mesenteric cyst cases originate from the colon, as was the case in our instance (14,15).

In most reported cases, imaging modalities such as abdominal x-rays, which may or may not reveal bowel obstruction or simply the displacement of bowel loops to one side, depending on the cyst's size, along with abdominal ultrasound and CT scans were employed (5,6). However, we didn't opt for any imaging since we initially considered this to be a straightforward case of an irreducible inguinal hernia. Nevertheless, the question arises: Is it possible to distinguish between the contents of an inguinal hernia, such as bowel or omentum, and a mesenteric cyst? Is it worthwhile to undergo additional imaging to rule out this rare diagnosis? These are questions that warrant further exploration.

Surgical excision of the cyst, with or without bowel resection and anastomosis, is necessary and typically results in excellent outcomes. Opting for complete excision is the preferred treatment to minimize the chances of recurrence. When preservation of intestinal vascularity is not feasible, it becomes necessary to perform segmental bowel resection. In contrast to adults, who require resection and anastomosis in about 33% of cases, the need for this procedure is higher, at approximately 50%-60%, in pediatric cases (1,5). For select cases, alternative treatment options may include marsupialization, sclerotherapy, drainage, enucleation, and percutaneous aspiration (16).

Conclusion

This case report illustrates the diversity of mesenteric cyst presentations in the pediatric population. It is essential to bear in mind that it can also manifest as an inguinal hernia.

Ethical Approval:

As per international standard or university standards written ethical approval has been collected and preserved by the author(s).

Consent

As per international standards, parental written consent has been collected and preserved by the author(s).

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