e-ISSN: 0975-1556, p-ISSN:2820-2643

Available online on www.ijpcr.com

International Journal of Pharmaceutical and Clinical Research 2023; 15(4); 746-751

Case report

A Case Presentation of an Infant with Enteric Duplication Cyst and Mesenteric Cyst

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Received: 14-01-2023 / Revised: 15-03-2023 / Accepted: 03-04-2023
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Conflict of interest: Nil

Abstract

Introduction: Enteric duplication cysts are rare congenital malformations of the gastrointestinal tract formed during embryonic development. The incidence is 1 in 4500 live births with a slight male predominance. Multiple duplication cysts are rather uncommon. Mesenteric cysts are rare surgical conditions occurring approximately in 1/200,000 – 350,000 hospital admissions. A mesenteric cyst can occur anywhere in the mesentery of the gastrointestinal tract, most common in the mesentery of the small bowel.

Case Scenario: An 8 months old male child was brought with complaints of intermittent irritability, abdominal distension, and constipation since birth with multiple previous hospital admissions in view of subacute intestinal obstruction managed conservatively. Computed tomography was suggestive of multiple cystic lesions in the left lumbar region likely enteric cysts. The patient was posted for elective exploratory laparotomy with intraoperative evidence of a mesenteric cyst and two enteric duplication cysts with no communication with each other. Excision of the mesenteric cyst along with resection of the enteric cysts and the adjacent bowel was done with jejunoileal anastomosis. The post-operative recovery and follow-up period were uneventful.

Conclusion: These cysts are rare and can either be symptomatic or asymptomatic. In symptomatic patients, surgical resection is often the choice for symptom relief. However, in asymptomatic patients, surgical resection is controversial, though they have to be resected to avoid late complications like malignant transformation.

Keywords: Enteric Duplication Cysts, Mesenteric Cysts, Congenital Malformations, Laparotomy, Abdominal Distension

Background

Enteric duplication cysts (EDCs) are rare congenital anomalies found most commonly in the ileum (33%), followed by the oesophagus (20%) and colon (13%). [1] The incidence is 1:4,500 births, found in 0.2% of all children, with a slight male

predominance. [2] EDCs must have three characteristics: an epithelial lining containing the mucosa of the alimentary tract, an envelope of smooth muscle, and the cyst must be closely attached to the GT by sharing a common wall. The size, location, type, mucosal pattern and presence of complications produce different clinical presentations and several imaging findings of the EDCs. Enteric duplication cysts can be of three types:- 1) Classical, with the shared common wall and blood supply. 2) Completely isolated from the bowel, which has an independent blood supply. 3) Intermediate, with part of the duplication independent and part of its a sharing common wall with the bowel. Ultrasonography (US) is the most used imaging method for the diagnosis of abdominal EDCs. Magnetic resonance (MR) and computed tomography (CT) are utilised for oesophageal EDCs and for helping in difficult surgical approaches. [3] Mesenteric cysts are benign and rare abdominal masses that may appear anywhere in the omentum or mesentery of the gastrointestinal tract. The mesenteric cyst can be of two types:- 1) Heterogeneous and 2) Chylolymphalic. There is a possibility of extension from the mesentery to the retroperitoneal regions. The incidence of mesenteric and omental cysts has been reported in about 1 case per 20,000 in children, and 1 in 105,000 cases in adults. [4] Mesenteric cysts in children, in general, are rare and benign lesions and often asymptomatic, but there are several complications, including “dramatic” ones, related to these malformations: volvulus, necrotic and/or perforated bowel, infections. Differential diagnosis should be with lymphangioma, intestinal duplication or retroperitoneal cyst. [5] Despite ultrasound may provide useful information, diagnosis is often made during the surgical intervention and confirmed by pathologists. [6] Since the diagnosis of mesenteric cysts is very challenging due to the lack of pathognomic signs and symptoms, various differential diagnoses and the infrequent nature of the disease; therefore, it is worth reporting this case. [4], [7]

The objective of this paper was to discuss the clinical presentation, investigations, diagnosis and treatment of an 8-year-old child that presented with a duplication cyst of the ileum.

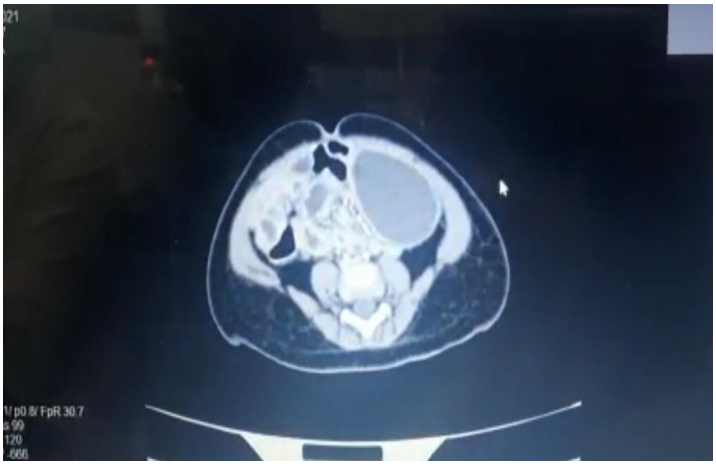
Case Scenario:

An 8-month-old male infant brought by parents with complaints of intermittent abdominal distension, and constipation since birth. History of multiple hospital admission in view of subacute intestinal obstruction which was managed conservatively.

Clinical feature- Per abdomen soft, distended with an ill-defined palpable lump at left iliac fossa.

Computed tomography - Multiple cystic lesions in the left lumbar region likely enteric cysts with no signs of intestinal obstruction.

Elective exploratory laparotomy was performed with intraoperative evidence of a chylolymphalic mesenteric cyst of size 4 x 4 x 3 cm at 30 cm distal to the duodenum-jejunal junction with its own blood supply and two enteric duplication cysts, one of size 6 x 5x 5 cm having a common wall with bowel i.e classical with was 70 cm distal to the duodenum-jejunal junction and second with no communication with adjacent bowel extending from 90 cm distal to duodenum-jejunal junction over a length of 50 cm. Excision of the mesenteric cyst along with resection of the enteric cysts and adjacent bowel was done with jejunoileal anastomosis. The post-operative recovery and follow-up period were uneventful. The histopathology report was consistent with clinical intraoperative findings.



Computed Tomography of Abdomen + Pelvis suggestive of multiple cystic lesions in the left lumbar region likely enteric cysts

Intra-Operative Findings:

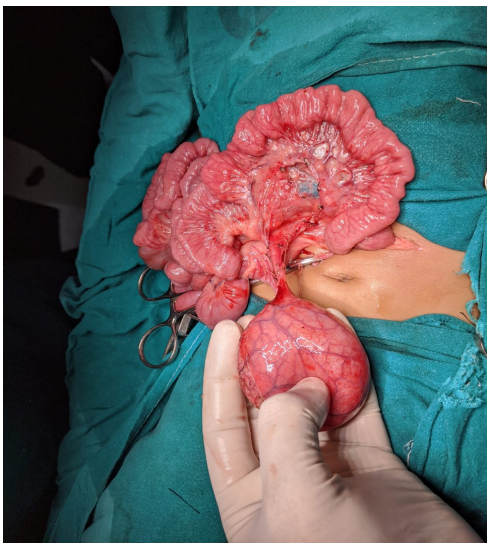


Figure 1: Mesenteric cyst having independent blood supply

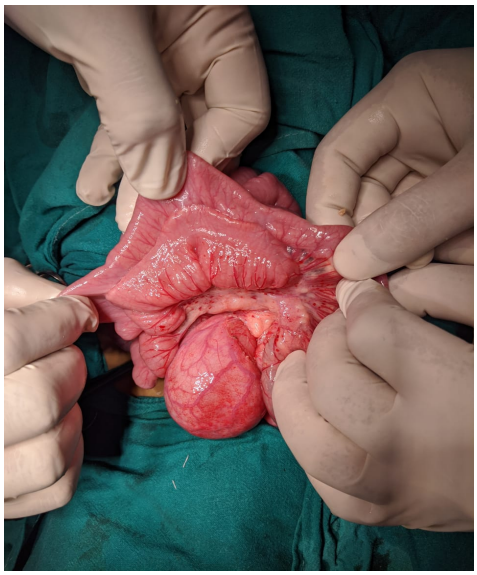


Figure 2: Isolated Enteric cyst (Duplication of bowel)

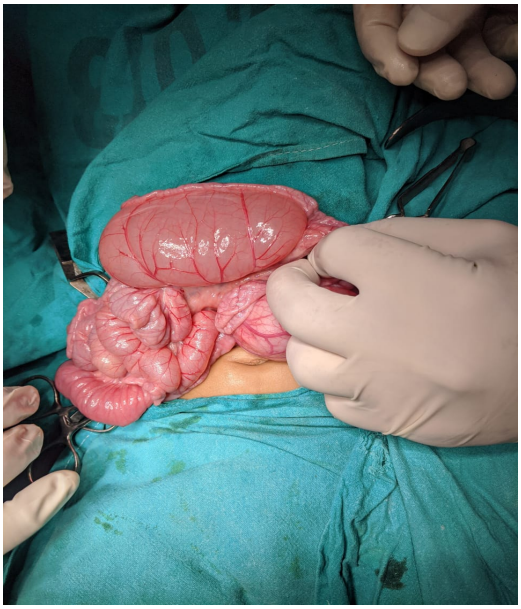


Figure 3: Enteric cyst, classical type

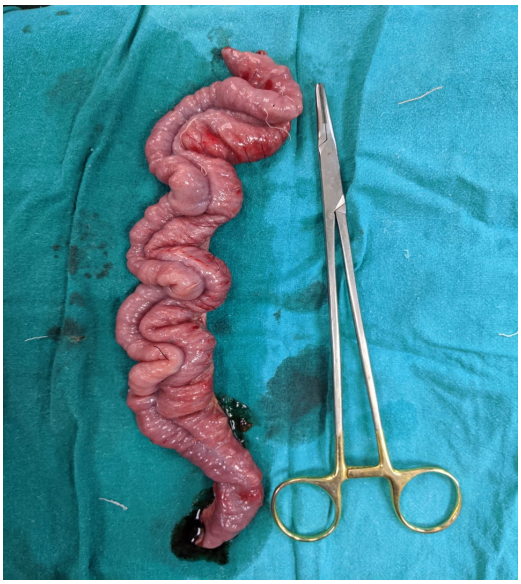


Figure 4: Classical+ isolated segment was excised as a single segment

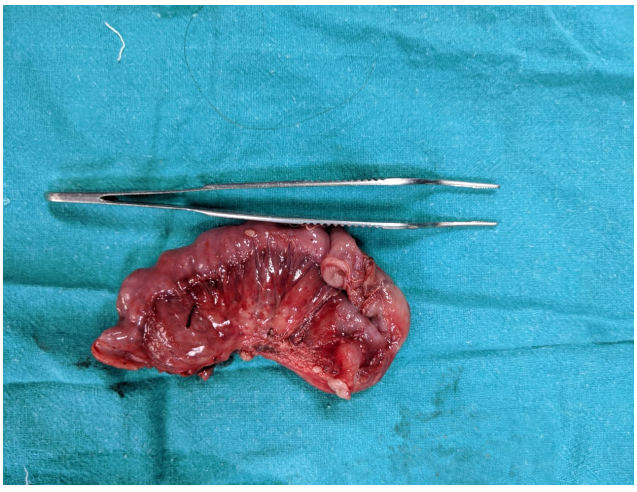


Figure 5: Classical type duplication cyst

Discussion

As a potentially life-threatening disease, an enteric duplication (ED) or intestinal or enteric duplication cyst (EDC) has all the time been perplexing pediatric surgeons. It is really a challenging task to make a clinical diagnosis mainly due to its rarity and nonspecific presentations unless complications ensue unexpectedly. In addition, it affords little opportunity to elucidate its mysterious nature and characteristics. An EDC is an unusual congenital deformity of the alimentary system, which is a separate entity invested with a cystic appearance, but at the same time is in intimate contact or communication with the alimentary tract.[8] Reginald Fitz first used the word "duplication" in 1884, to describe the remnants of the omphalo-mesenteric duct. [9]

The lesions are classified as (1) Classical, with the shared common wall and blood supply (2). Completely isolated from the bowel, which has an independent blood supply (3) Intermediate, with part of the duplication independent and part of its sharing a common wall with the bowel. [10] In our case, both classical and isolated types were seen.

Almost 70% of the enteric duplications that present with symptoms do so within the 1st year of life and 85% by 2 years of age. Excision of duplication is the treatment of choice. Small cystic or short tubular duplication can be managed with segmental resection along with adjacent bowel. Long tubular duplications will require mucosal stripping through a series of multiple incisions. [11] In our case, the entire small bowel segment along with a duplication cyst was excised and jejunoileal anastomosis was done.

CT may depict the location and extension of the cyst, as well as complications, the associated anomalies and the anatomical relationship with surrounding structures.[3] The diagnosis of mesenteric cysts is often made by ultrasonography and CT scans, but sometimes the diagnosis is determined only during surgery, due to the complexity of the mass in terms of size and location. In the CT scan conducted for our patient, an abdominal ascites or hematoma was found. [4]. In our patient, abdominal CT was performed when an abdominal mass was identified upon palpation at the left iliac fossa, which showed displacement of the intestinal loops to the left. On CT multiple cystic lesions in the left lumbar region were likely enteric cysts with no signs of intestinal obstruction. [7]

The patient was posted for elective exploratory laparotomy with intraoperative evidence of a mesenteric cyst and two enteric duplication cysts with no communication with each other. Excision of the mesenteric cyst and resection of the enteric cysts and the adjacent bowel were done with jejunoileal anastomosis. The post-operative recovery and follow-up period were uneventful.

Similarly, Patiño Mayer J et al (2014) stated that early excision is associated with less morbidity and a shorter length of stay compared to an excision in symptomatic patients. There are significant post-operative morbidities after resection of complicated EDCs, compared with elective surgery. Cyst excision alone could be considered, but if there is communication, sometimes a resection of the adjacent bowel is necessary. It is important to ensure that the cyst is entirely resected because recurrence or malignant changes may occur [12].

The patient was posted for elective exploratory laparotomy as surgical management was considered in our patient since the patient had abdominal distension associated with irritability and constipation recurrently since birth. As we corroborated with Rocio del Pilar Pereira-Ospina (2020) It is important to know these pathologies even though they are infrequent, because although they are benign masses by definition, they can lead to complications

such as intestinal torsion, intestinal obstruction, and even peritonitis. [7]

Conclusion

These cysts are rare and can either be symptomatic or asymptomatic. In symptomatic patients, surgical resection is often the choice for symptom relief. However, in asymptomatic patients, surgical resection is controversial, though they have to be resected to avoid late complications like malignant transformation.

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