

A Large Multiloculated Omental Cyst Presenting as an Acute Abdomen in a 5-Month-Old Infant: A Case Report and Review of Literature

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Abstract: Introduction: Omental cysts are the rarest form of intra-abdominal masses that occur primarily in children. Patients with omental cysts usually present with abdominal distension and a painless abdominal mass. They are often asymptomatic but can present acutely, leading to significant morbidity. A preoperative diagnosis is challenging, especially in resource-limited settings. The diagnostic procedures include ultrasonography and computed tomography (CT) scans. Complete surgical excision of the cyst is considered the treatment of choice. This case emphasizes the importance of considering omental cysts in the differential diagnosis of acute abdomen in young children. **Case Report:** A 5-month-old male infant presented with a clinical picture of gradually increasing abdominal distension, abdominal pain, vomiting, and irritability for the last two weeks. He was tachypneic, tachycardic, and had diffuse abdominal tenderness. A contrast-enhanced CT scan and ultrasonography of the abdomen revealed an abdominopelvic cystic lesion. The patient underwent laparotomy, where a large multiloculated omental cyst was found to originate from the greater omentum. The diagnosis of an omental cyst was established based on intraoperative findings. Consequently, complete excision of the cyst was performed. **Conclusion:** Omental cysts are rare in pediatric patients and have a variety of presentations. This case highlights a rare but significant cause of acute abdomen in infants. Clinicians should maintain a high index of suspicion for omental cysts in similar presentations, as timely diagnosis and intervention can lead to favorable outcomes.

Keywords: Omental Cyst, Infants, Acute Abdomen, Surgical Intervention.

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Case Report

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INTRODUCTION

Omental cysts are the rarest forms of intra-abdominal masses, occurring primarily in children. They often present with symptoms similar to other more common abdominal pathologies and are frequently discovered incidentally on imaging studies. The incidence of mesenteric and omental cysts is approximately 1 in 20,000 among children, with an even lower occurrence in infants [1]. The first report of an omental cyst was published in 1852 by Gairdner [2]. Omental cysts have uncertain etiologies, including lymphangioma, failure of fusion of mesenteric leaves, and deficiency of the lymphatico-venous shunt. They have a variety of presentations depending on their number, location, size, and content. They can also present with features of an acute abdomen due to intestinal obstruction, bleeding into the cyst, torsion, or

rupture of the cyst [3]. Due to these diverse clinical presentations, preoperative diagnosis is challenging, especially in resource-limited settings. The diagnostic procedures include ultrasonography and contrast-enhanced CT scans, which provide more details about the extension and properties of the lesion [4]. Since no medical therapy is available, the only treatment option is complete surgical removal. Open resection is preferred over laparoscopic excision to avoid spillage [5].

Given the rarity of omental cysts, we hereby report a case of a large multiloculated omental cyst in a 5-month-old infant presenting with an acute abdomen.

This case report aims to highlight the uncommon site and age of clinical presentation of a multiloculated omental cyst presenting as an acute

abdomen and discuss the diagnostic process and management strategies. The case report also shows the need for a high Index of suspicion and early diagnostic imaging for pediatric patients.

CASE AND PRESENTATION

A 5-month-old male infant presented to the emergency department with a 48-hour history of irritability, vomiting, abdominal distension, and abdominal pain. The pain was diffuse but more pronounced in the periumbilical region. His mother also noticed new-onset abdominal distension. The child

demonstrated decreased appetite and vomiting. His last bowel movement was the previous evening and was normal.

Upon presentation, the child was febrile (37.7°C), tachycardic (PR-144 bpm), and tachypneic (RR-54 bpm). On examination, the patient's abdomen was soft but distended, with tenderness to palpation around the epigastric and umbilical regions. Laboratory findings were significant for leukocytosis (WBC-14,000), hypoalbuminemia (albumin-2.2 g/dL), and an elevated CRP (38 mg/L) but were otherwise unremarkable.



Figure 1: CT scan report

A transabdominal ultrasound was performed, which demonstrated a large, well-defined, multiloculated cystic lesion occupying the abdominal cavity. A contrast-enhanced CT scan revealed a large encapsulated cystic abdominal lesion with multiple septae, measuring

approximately 11.1 cm × 7.8 cm, extending from the subhepatic region inferiorly to the mid and lower abdomen. Both imaging studies noted the cyst exerting a mass effect on the small bowel and colon.



Figure 2: Operating room for an exploratory laparotomy



Figure 3: Postoperative recovery

The patient was initially admitted to the pediatric department and subsequently referred to the pediatric surgery department. The patient was rehydrated with saline, started on intravenous meropenem and metronidazole, given analgesics, and had a nasogastric tube inserted for decompression.

The following day, the patient was taken to the operating room for an exploratory laparotomy. Upon entering the peritoneal cavity, a large multiloculated thin-walled cyst was apparent, occupying most of the mid and lower abdomen. The cyst contained fluid and appeared multilocular. It was carefully elevated out of the abdomen and traced to its origin in the greater and lesser sacs. The thin wall of the cyst required careful handling to avoid rupture.

The inferior and lateral borders of the cyst were continuous with the greater omentum, with a vascular pedicle. The cyst was separated from the omentum using electrocautery and ligation. The superior attachment of the cyst was then explored, revealing its origin from the confluence of the transverse mesocolon and the inferior aspect of the tail of the pancreas.

The cyst was completely excised and sent for histopathological examination. Fluid from the cyst was aspirated and sent for analysis. Immunohistochemical analysis was not performed.

The infant had an uneventful postoperative recovery and was discharged on the fifth postoperative day. The patient was seen in the hospital two weeks after discharge and was doing well.

DISCUSSION

Omental and mesenteric cysts are rare entities, differentiated by their location of occurrence, with a reported incidence of 1 in 20,000 admissions to a children's hospital [6].

Mesenteric and omental cysts are thought to represent benign proliferations of ectopic lymphatics that lack communication with the normal lymphatic system [7]. Omental cysts are restricted to the lesser or greater omentum [8]. The present case describes a large omental cyst that developed on a pedicle from the greater omentum in the region of the transverse colon. Mesenteric and omental cysts can be simple or multiple, unilocular or multilocular, and may contain hemorrhagic, serous, chylous, or infected fluid [2-9].

Our patient had an 11.1 cm × 7.8 cm multilocular cystic mass containing hemorrhagic fluid. Clinical presentations include an abdominal mass, abdominal distension, abdominal pain, and decreased appetite with vomiting [10]. Compression of the portal vein and respiratory distress are additional symptoms caused by the progressive enlargement of the cyst [10]. The most common physical finding of a mesenteric cyst is a compressible abdominal mass, movable transversely but not longitudinally, whereas omental cysts are freely movable [11].

Between 11% and 19% of patients present with acute abdominal symptoms due to torsion, bleeding, or rupture of the cyst [10].

The most prevalent mode of acute abdomen in children is small bowel obstruction. The differential diagnosis includes intestinal duplication, ovarian cyst, choledochal cyst, pancreatic cyst, hydatid cyst, renal cyst, hydronephrosis, and cystic teratoma. A correct preoperative diagnosis of an omental cyst has been made in only about 13.25% of reported cases [10]. The diagnosis requires a high index of clinical suspicion and thorough examination with imaging studies.

Our patient underwent ultrasonography and contrast-enhanced CT scanning, which allowed for precise localization of the mass and diagnosis before surgical intervention [10]. Ultrasonography is often the initial imaging modality of choice for diagnosing omental cysts [4-7]. It typically reveals a fluid-filled cystic structure, commonly with thin internal septa and sometimes with internal echoes from debris, hemorrhage, or infection [7]. Abdominal CT scanning provides additional information and can confirm the organ of origin of the cyst [7]. Complete excision of the omental cyst is now considered the preferred treatment of choice [3-5]. Bowel resection is rarely necessary, and recurrence is uncommon [3]. Laparoscopic resection of small cysts can be performed, but laparotomy is recommended when a minimally invasive approach may not allow for safe resection without rupture of the cyst.

CONCLUSION

This 5-month-old infant presented with abdominal pain, vomiting, gradually increasing abdominal distension, and subclinical early satiety. He was found to have an omental cyst and underwent successful surgical resection. This case highlights a rare but significant cause of acute abdomen in infants. Clinicians should maintain a high index of suspicion for omental cysts in similar presentations, as timely diagnosis and intervention can lead to favorable outcomes.

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