

## Giant mesenteric cyst

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### Abstract

Mesenteric cysts are uncommon benign abdominal lesions with no classical clinical features. The preoperative diagnosis requires the common imaging modalities but the final diagnosis is established only during surgery or histological analysis. The treatment of choice is complete surgical excision. We report an 18-year-old female with a non-specific abdominal pain and discomfort since 3 weeks. Her CT scan showed a huge cystic swelling, which necessitated surgical exploration. Preoperatively, a giant cyst was encountered with displacement of bowel loops. The cyst was completely removed and histology report confirmed mesenteric cyst without evidence of malignancy.

### Introduction

Mesenteric cysts are rare, usually benign tumors, with an incidence of 1/105,000-250,000 in the admitted surgical patients<sup>1</sup>. The cyst was first described in 1507 by the Florentine anatomist Benevieni<sup>2</sup> during the autopsy of a 7-year-old boy while the first successful resection was performed in 1880 by Tilaux<sup>3</sup>. About half of these cysts are chylous in nature, first reported at necropsy by Rokitansky in 1842<sup>4</sup>. Majority of cysts are single, but can be uni- or multi-locular<sup>5</sup>. Mesenteric cysts are lined by a single layer of columnar or cuboidal epithelial cells<sup>6</sup>. This layer is sometimes destroyed as a result of pressure exerted by the cyst fluid. Consequently, the cyst wall becomes composed of fibrocollagenous tissues along with chronic inflammatory cells<sup>7</sup>. The average size of mesenteric cysts ranges from 2 to 35 cm.<sup>8</sup> The present case report describes the surgical management of a giant mesenteric cyst in a young girl.

### Case Report

An unmarried 18-year-old girl presented to the surgical clinic of Ohud Hospital Al Madina Al Munawara Saudi Arabia with the history of dragging pain in the lower part of abdomen

since 3 weeks. She denied any history of trauma or previous abdominal surgery. The patient had normal vital signs. Her abdominal examination demonstrated slight distension with a cystic and fluctuant mass measuring 30 × 25 cm in the suprapubic region. Bowel sounds were audible with normal frequency. All baseline blood investigations were normal. The computed tomography (CT) scan revealed a huge cystic mass in the abdomen and pelvis measuring 30×27 cm, displacing the bowel loops and urinary bladder (Figure 1). The patient was prepared for operation and an exploratory laparotomy, which revealed a giant cystic mass, originating from the mesentery of small bowel, occupying almost entire abdominal cavity (Figure 2). The cyst was completely excised which was not found to be infiltrating the surrounding structures (Figure 3). Layered closure of the abdomen was done after the placement of a suction drain. The patient made uneventful recovery and was discharged home on 5<sup>th</sup> postoperative day. The histological report showed a mesenteric cyst lined by columnar epithelial cells and contained sterile fluid with few neutrophils.

### Discussion

Majority of mesenteric cysts are congenital, but may be related to previous abdominal surgery, pelvic diseases, and trauma.<sup>8,9</sup> The most common presentation is non specific abdominal pain (55-82%), followed by the complaint of abdominal mass (54-61%), and abdominal distension (17-61%).<sup>10,11,12</sup> Physical examination is often unremarkable but reveals a mass in 66.8% of cases<sup>12</sup> while the average duration of symptoms are 2-6 months (range; 12 h to 12 months).<sup>13</sup>

The precise cause of mesenteric cyst is not clear. The most accepted theory, purposed by Gross, is benign proliferation of ectopic lymphatics in the mesentery that lacks communication with the remainder of the lymphatic system.<sup>14</sup> Viola *et al.* hypothesized that mesenteric cystic lymphangioma is an acquired anomaly due to chronic intermittent volvulus.<sup>15</sup> The most widely accepted classification was coined by Beahrs *et al.* in 1955.<sup>16</sup> According to this classification, there are four types of mesenteric cysts; developmental, traumatic, infective, and neoplastic. The malignant cystic mesothelioma is the only mesenteric cystic tumor that carries malignant potential and has tendency to recur after surgical excision.<sup>17</sup> Mesenteric cysts in the pediatric age group occur more often in males (62.5%) and the majority of the patients are younger than 10 years, 75% were younger than 5 years of age.<sup>18</sup> Ros *et al.*<sup>19</sup> have extensively reviewed the correlation of histological classification and imag-

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ing correlation of mesenteric and omental cysts. Accordingly, a nonpancreatic pseudocyst is usually a unilocular or multilocular cyst located in either the mesentery or the omentum, with abundant debris sonographically and an enhancing wall on CT. An enteric duplication cyst is a unilocular cyst with an enhancing wall on CT. Such striking features help understand the diverse nature of mesenteric and omental cysts. Mesothelial and enteric cysts are anechoic, thin-walled cysts.

Mesenteric cysts can develop anywhere in the mesentery of GIT from duodenum to rectum. In a review series of 162 cases, 60% occurred in the small bowel mesentery, 24% in the large bowel mesentery, and 14.5% in the retroperitoneum.<sup>20</sup> 50-60% of mesenteric cysts occur in the mesentery of ileum.<sup>21</sup> A variety of diagnostic modalities are applied to confirm the presence of mesenteric cyst, but ultrasonography (USG) and CT scan of the abdomen tend to be the favored methods.<sup>22</sup> USG of the abdomen reveals a hypoechoic cystic mass with or without intense echos and can also show septa, debris, abdominal fluid levels. The CT scan allows determining the size, and sometimes the point of origin of the mass, the relation to the neighboring organs and depicts better wall calcification.<sup>20</sup> MRI offers more information and accurately describes the relation between the mass and soft tissues. MRI-MRCP appeared to be more specific, defining the dimensions of the cyst, its origin, and its cystic component.<sup>23</sup>

The treatment of choice for mesenteric cyst is surgery. Simple evacuation and marsupialization are not recommended because both are associated with unacceptably high recurrence and infection rate.<sup>24,25</sup> The procedure of choice for benign mesenteric cyst is complete enucleation.<sup>12</sup> Localized resection of intestine or surrounding structures may be required to excise the cyst en bloc;<sup>26</sup> our case did not require this step. Wiesen *et al.*<sup>27</sup> described the complete

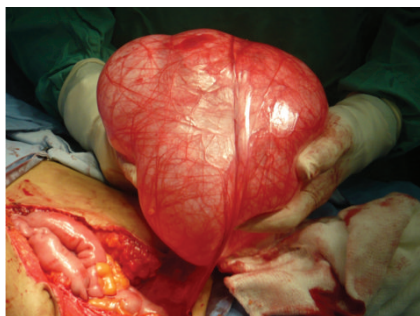
enteroscopic excision of a mesenteric chylous cyst that developed in the lumen of the proximal jejunum. Some authors performed laparoscopic fenestration of the cyst, if located near a major abdominal vessel.<sup>26</sup> Tebala *et al.*<sup>28</sup> performed successful laparoscopic excision of a huge mesenteric chylous cyst in a 58-year-old man. Similarly, Shimura *et al.*<sup>11</sup> and Vu *et al.*<sup>29</sup> have reported laparoscopic excision of mesenteric cysts. In the former case, the cyst contents were aspirated before resection for the ease of handling. In the later, aspiration was only per-

formed after mobilization to aid extraction. In both reports complete resection was achieved without any recurrence. The operating time was longer in laparoscopic resection, but the hospital stay was shorter and resulted in postoperative pain earlier return to normal activity.<sup>11</sup>

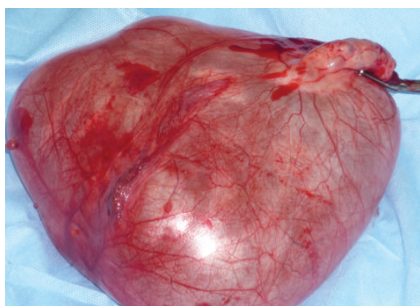
In conclusion, mesenteric cysts are extremely rare benign lesions arising from various sites. These cysts present with vague symptoms, there are no specific investigative tools to diagnose these lesions. Surgical excision offers the best curative measure.



**Figure 1.** Contrast enhanced computed tomography scan of abdomen showing soft tissue density homogenous mass occupying whole of the abdominal cavity displacing the bowel loops to the periphery.



**Figure 2.** Intraoperative view of the cystic mass while being resected.



**Figure 3.** Resected specimen of mesenteric cyst.

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