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**Case Report**

# A Case of Giant Mesenteric Cyst Originating from the Small Intestine

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**Abstract**: A 62-year-old man was admitted to Showa University Fujigaoka Hospital because of a giant mass that was discovered approximately 8 weeks after the development of obvious symptoms, namely upper abdominal pain, vomiting, and progressive distension. Ultrasonography revealed a giant cystic mass that was occupying the right upper abdomen, and contrast-enhanced computed tomography revealed a huge, relatively well-defined, and low-density cystic mass that measured 10 cm in diameter. Radical resection of the tumor was performed via open laparotomy, along with segmental small intestine resection to address potential invasion into adjacent tissues. Histological findings of the resected specimen indicated mesenteric cyst. The patient's postoperative recovery was uneventful and he was discharged after 11 days. At the 12-month follow-up, the patient was in good health with no signs of recurrence.

**Key words**: mesenteric cyst, small intestine, resection

## Introduction

Mesenteric cysts are rare, benign lesions that are categorized into four etiological groups: (i) embryonic and developmental; (ii) neoplastic; (iii) traumatic and acquired; and (iv) infective and degenerative[1, 2)]. Developmental cysts of the mesentery are a heterogeneous group of lesions. Herein we report on a case of a giant mesenteric cyst in an adult man with no personal or family history of any specific disease.

## Case report

A 62-year-old man was admitted to Showa University Fujigaoka Hospital because of a giant mass in his abdomen, which was discovered during a routine physical examination. In addition, he had an approximate 8-week history of progressive upper abdominal pain, vomiting, and progressive distension. However, the patient had no personal or family history of any specific disease and he had not suffered any trauma. The patient's body mass index was 16.4 kg / $m^2$ and abdominal examination revealed abdominal distension, decreased bowel sounds, and tenderness

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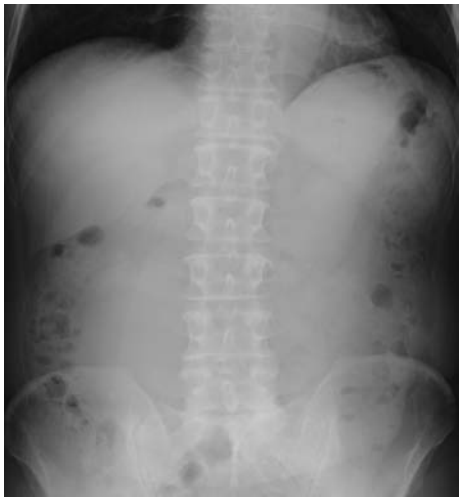

Fig. 1. Abdominal radiography revealed colon gas that had been displaced by a mass in the soft tissues.

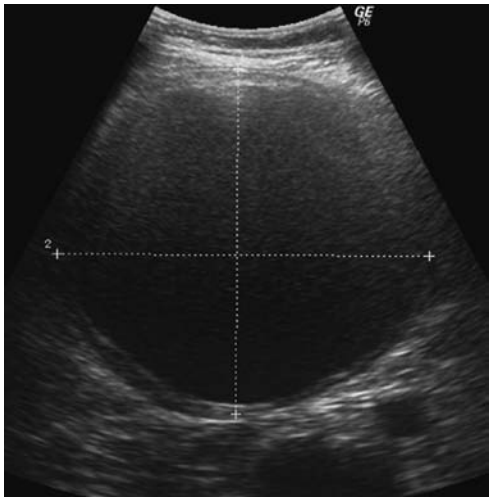

Fig. 2. Ultrasonography revealed a giant cystic mass, with cystic and solid components, occupying the right upper abdomen and measuring approximately 106 × 110 mm.

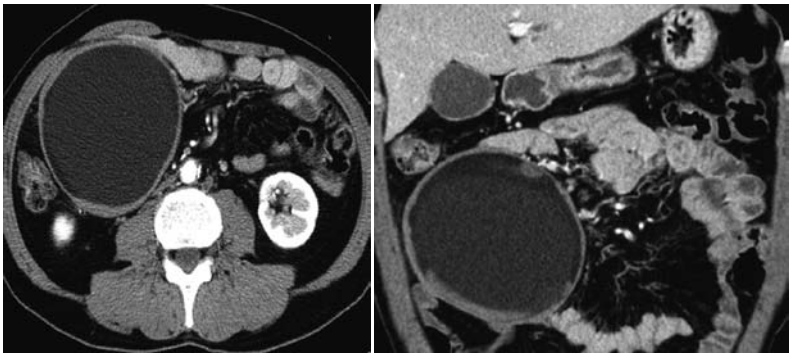

Fig. 3. Contrast-enhanced computed tomography revealed a huge (left), relatively well-defined (left), low-density cystic mass (right) with an unclear origin.

with rebound tenderness. His vital signs were as follows : temperature 36.8°C ; pulse rate 66 beats / min ; and blood pressure 110 / 72 mmHg. Laboratory examination revealed a hemoglobin level of 14.2 g / dl, a leukocyte count of 8100 cells / $cm^3$, and a serum C-reactive protein (CRP) level of 0.26 mg / dl.

Abdominal radiography revealed colon gas displacement, which appeared to be caused by a mass in the soft tissues (Fig. 1). In addition, ultrasonography revealed a giant cystic mass occupying the right upper abdomen, which measured approximately 106 ×110 mm and contained cystic and solid components (Fig. 2). Furthermore, contrast-enhanced computed tomography (CT) revealed a huge, relatively well-defined, and low-density cystic mass with an unclear origin (Fig. 3). Magnetic resonance imaging revealed thin-walled cystic collections, without contrast enhancement, although there was no evidence of flow, hemorrhage, or hemosiderin deposition

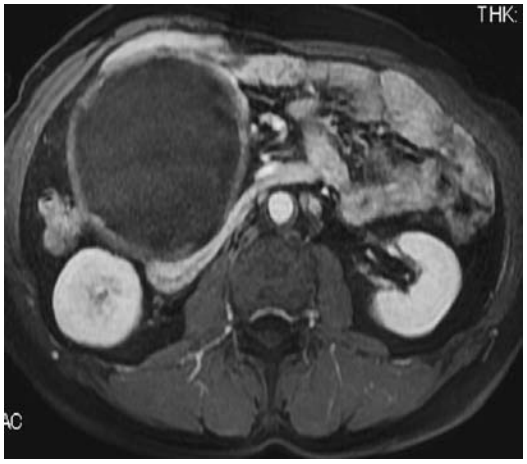


Fig. 4. Magnetic resonance imaging revealed thin-walled cystic collections, without contrast enhancement, and no evidence of flow, hemorrhage, or hemosiderin deposition.

Fig. 5. Intraoperative findings indicated that the tumor had originated from the mesentery of the small intestine.

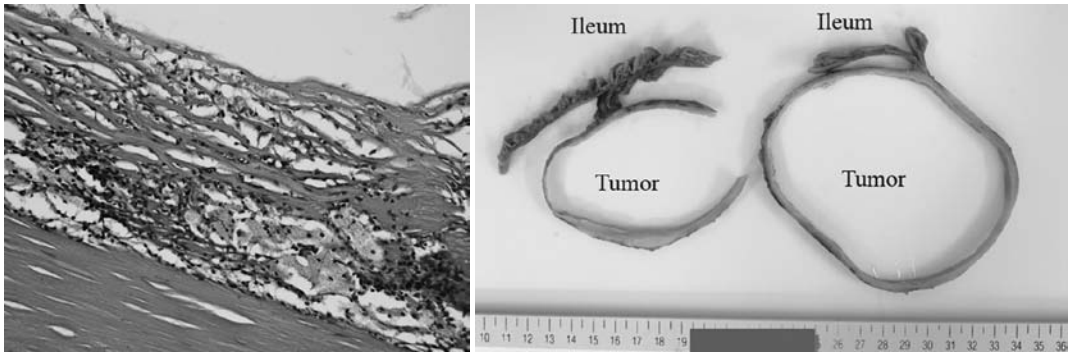


Fig. 6. Histological findings (left) and the cut surface of the gross pathology specimen (right). Histologically, the tumor appears to be a monocystic lesion with a thin wall, lymphocytes, and histiocytes without epithelial cells, indicating that it is a so-called pseudocyst (hematoxylin and eosin; original magnification ×40).

(Fig. 4). However, the results of tests for neoplastic markers (carcinoembryonic antigen and carbohydrate antigen 19-9) were negative. Therefore, we suspected mesenteric cyst, cystic lymphangioma, teratoma, or a gastrointestinal stromal tumor. Laparotomy was performed, and the midline incision revealed a huge mass originating from the mesentery of the small intestine (Fig. 5). The artery and vein were found to be completely enveloped by the tumor, and were therefore dissected. The resected specimen with residual fluid measured 100×110 mm. The tumor contained a brown creamy liquid. Histologically, the tumor was found to be a monocystic lesion with a thin wall, lymphocytes, and histiocytes without epithelial cells, indicating that it was a so-called pseudocyst (Fig. 6). The patient's postoperative recovery was uneventful and he was discharged 11 days later with complete relief of all previous symptoms. At the 12-month follow-up, the patient appeared in good health and had no signs of symptom recurrence.

## Discussion

Mesenteric cyst was first described by the Italian anatomist Benevieni in 1507. The incidence of the lesion is approximately one in 100,000 adults and one in 20,000 children. Males and females are equally affected[3]. Developmental cysts of the mesentery are a heterogeneous group of lesions. They can be grouped into three categories, namely lymphatic, intestinal, and urogenital cysts[4]. The possible mechanism underlying the development of intestinal cysts is differentiation of the celomic epithelium or peritoneum into tubal-type epithelium[5]. Cystic lymphangiomas are rare, slow-growing, and benign tumors that originate from the lymphatic channels[6]. These tumors are most commonly located in the neck region (75%), although they can also be found in the axillary region (20%) and infrequently in the retroperitoneum, mesentery, omentum, colon, pelvis, groin, bone, skin, scrotum, and spleen[7]. In the present case, the patient suffered from progressive upper abdominal pain, vomiting, and progressive abdominal distension over a period of 8 weeks. In similar cases, ultrasonography is typically the first tool for investigating a suspected mass in the abdomen, given its non-invasive nature, low cost, and lack of ionizing radiation. In the present case, ultrasonography and contrast-enhanced CT revealed a giant cystic mass of uncertain origin that occupied the right upper abdomen. Therefore, we made a differential diagnosis that included mesenteric cyst, cystic lymphangioma, teratoma, or a gastrointestinal stromal tumor. In cases of retroperitoneal localization, percutaneous needle biopsy should be avoided and thus we performed radical resection, because it is a safe and effective treatment option that can provide an accurate diagnosis. Furthermore, histological analysis of the resected mass is important for a definitive diagnosis, because incomplete resection of a cystic tumor can increase the risk of recurrence given the tendency towards invasive growth. Therefore, the treatment of choice in similar cases should be complete radical resection.

In the present case, we resected a giant mesenteric cystic mass, considering that it may be a malignant tumor, in a previously healthy adult man. A laparotomic approach was indicated in this patient because the free space was limited inside his abdomen and intra-abdominal lymphangiomas are found in the retroperitoneum or the mesentery. At intraperitoneal sites, the small bowel mesentery (70%) is the most frequent location, with 50%–60% of all cysts located in the ileal mesentery[8]. Regardless of age, the clinical symptoms are diverse, varying from complaints of mild nausea to acute abdominal pain, with the mass effect accounting for the transition to a symptomatic state[9]. Our patient's postoperative recovery was uneventful, and he appeared in good health with no complaints at the 12-month follow-up. Progressive mesenteric cyst should be considered as a potential differential diagnosis if a patient presents with a cystic tumor in the abdomen, even in cases with no personal or family history of disease.

**Conflict of interest disclosure**

The authors have declared no conflict of interest.

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