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Single-incision laparoscopic excision of a chylous mesenteric cyst: A case report

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ABSTRACT

INTRODUCTION: Chylous mesenteric cysts are rare intra-abdominal lesions located in the mesentery of the gastrointestinal tract and may extend from the base of the mesentery into the retroperitoneum. The treatment is the complete removal of the cyst
PRESENTATION OF CASE: A 49-year-old female presented with abdominal pain. Abdominal computed tomography showed a 5.0-cm-diameter intraabdominal, homogenous cystic lesion located on the mesentery of the small intestine. Single-incision laparoscopic surgery was performed for complete resection.
DISCUSSION: Only a handful of cases of laparoscopic surgery for a mesenteric cyst have been reported, and no reports have been published regarding single-incision laparoscopic surgery for a mesenteric cyst.
CONCLUSION: We report the first known case of a chylous mesenteric cyst that was successfully treated by single-incision laparoscopic surgery.

1. Introduction

Mesenteric cysts are benign lesions that are found within the abdomen. They have an incidence of <1 in 100,000 patients [1]. Most mesenteric cysts present with variable and nonspecific symptoms [2]. In addition, rarely, carcinomas have been found to arise in mesenteric cysts [3]. Fortunately, they usually behave as benign tumors, and malignancy accounts for only 3% of the cases, arising gradually or de novo[1]. The treatment is the complete surgical removal of the cyst. The first successful report of laparoscopic surgery for a mesenteric cyst was in 1993 [4], and subsequently only a handful of laparoscopic cases have been reported [3,5–8]. Single-incision laparoscopic surgery has been performed for resection of benign and malignant gastrointestinal tumors in recent years; however, its safety and feasibility is still controversial, and there have been no reports of its use in resecting mesenteric cysts. This report deals with the first case of a mesenteric chylous cyst successfully treated by single-incision laparoscopic surgery.

2. Presentation of case

A 49-year old woman presented to her primary care physician's office with a 1-month history of vague abdominal pain. At the physical examination, no mass was detected. Abdominal ultrasonography confirmed a rounded cystic formation 4.8 cm in diameter in the region of the pancreatic tail. The pain was described as intermittent and was not brought on by any particular events, nor was it relieved by anything specific.

The patient had no previous medical or surgical history. Prior to the operation for the mesenteric cyst, she was found to have normal laboratory values, including normal levels of markers for malignancy. Preoperative computed tomography (CT) of the abdomen (Fig. 1) showed a 5.0-cm-diameter intraabdominal, homogenous cystic lesion containing surface formation with an enhanced capsule located on the mesentery of the small intestine. Magnetic resonance imaging (MRI) revealed a solitary circumscribed cyst measuring 4.9 cm × 4.2 cm, with a thick capsule containing a dense, high-fat fluid. Based on the findings of preoperative CT and MRI, a single port laparoscopic operation was chosen. GelPOINT® (Applied Medical, Rancho Santa Margarita, Ca, USA) was used for the surgery. GelPOINT® contains a Gelseal Cap, Alexis Wound Retractor, and 4 sleeves (ports). Initially, a 40-mm incision was placed at the umbilicus. The Alexis Wound Retractor accommodated the abdominal wall, and three sleeves (ports) were kept impaled on the Gelseal Cap.

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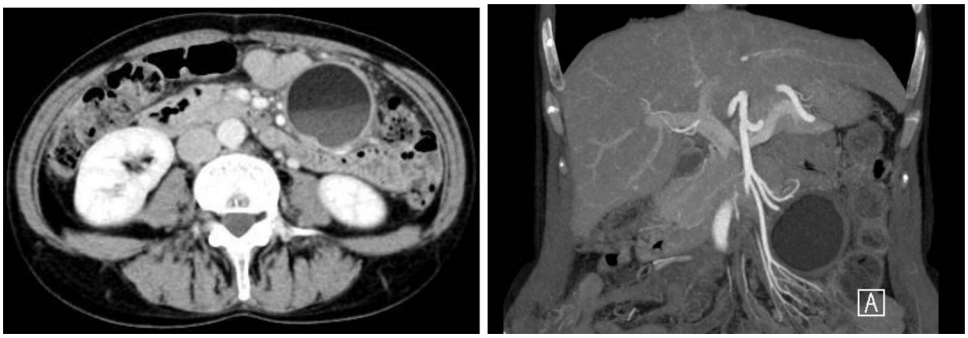

Fig. 1. (A) Axial and (B) coronal CT images demonstrating a cystic mass in close relation to mesenteric vessels and extending into the jejunal mesentery.

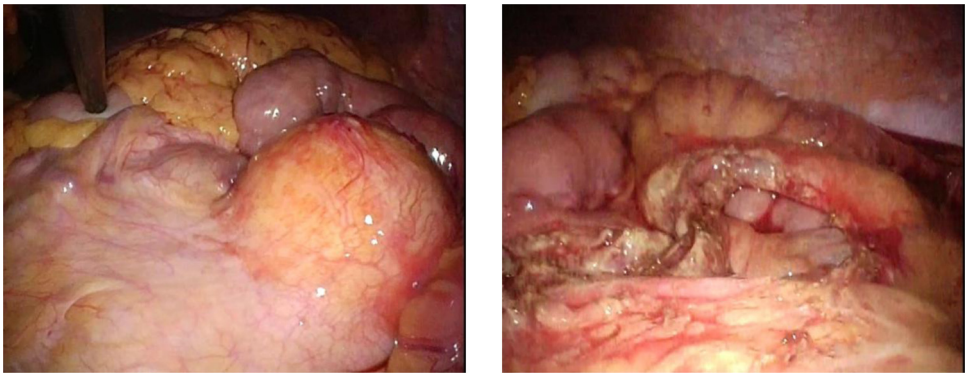

Fig. 2. An intraoperative image demonstrating cyst deriving from the jejunal mesentery before (A)and after (B) complete excision.

During the laparoscopic exploration, it was noted that the mesenteric cyst was in the upper-left quadrant. It was a thick-walled structure and fixed in the mesentery with mesenteric vessels of attachment (Fig. 2). The cyst was mobilized from the mesentery using harmonic shears and a radio knife. We completely controlled the major vessels running near the tumor and sealed the chylous and blood vessels to and from the cyst.

Once free, the cyst was removed from the abdomen via the incision which measured from 40-mm to 50-mm in length within the umbilicus without making any punctures and using a surgical retrieval bag. The operation time and blood loss were 169 min and 90 ml, respectively.By 5 days after the operation, the dull abdominal pain had vanished. The patient was discharged on the 5th postoperative day. A pathological examination of the cyst revealed the fluid to be benign. Laboratory tests on the cyst's liquid confirmed chylous content. The wall of the cyst was found to be fibrous with a histology consistent with chronic inflammation (Figs. 3 and 4).

The patient is currently alive at 2 years after undergoing the operation.

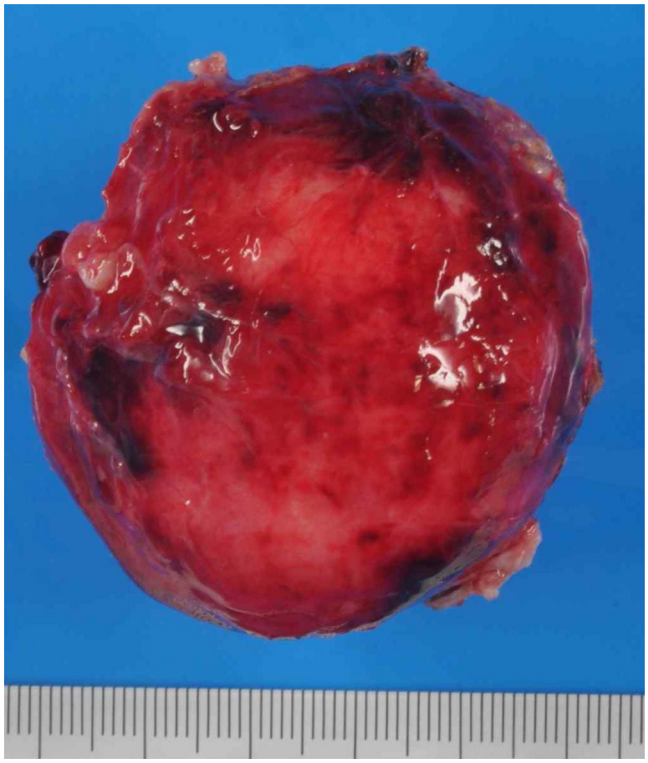

Fig. 3. Completely excised 5-cm-diameter mesenteric cyst.

3. Discussion

Most mesenteric cysts are rare and benign but tend to present with variable and nonspecific symptoms, such as abdominal pain, nausea, vomiting, anorexia, and a change in bowel habits, and cause complications, including intestinal obstruction, volvulus, torsion, bleeding, or rupture [2]. Similar lesions have been found to be cystic lymphangiomas, cystic stromal tumors, and mesotheliomas on a pathologic analysis. In addition, carcinomas have been found to arise in mesenteric cysts, albeit rarely [3].

The diagnosis of mesenteric cysts can be challenging, as chylous cysts mimic other pathologies, such as pancreatic pseudocysts or cystic tumors, pelvic diseases, and aortic aneurysms. A preoperative diagnosis may be achieved using imaging techniques (ultrasonography, CT, nuclear MRI) [9–11]. Ultrasonography is the first-line technique, as it can localize the cystic mass and often the involvement of the near anatomical structures. CT can then be used to