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Laparoscopic Management of Acutely Symptomatic Chylous Mesenteric Cyst

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ABSTRACT

Acutely symptomatic chylous mesenteric cyst is a very rare cause of acute abdomen. We report a case of acutely inflamed chyle-containing benign mesenteric cyst, highlighting the role of laparoscopy as a safe diagnostic and therapeutic modality.
Key words: cyst, mesentery, ascites, chyle; laparoscopy

CASE REPORT

A 44-year old Caucasian female patient presented to our surgical admissions unit with generalised abdominal pain, vomiting and abdominal distension. Her past medical history was unremarkable and she had no previous abdominal or pelvic surgery. Clinical examination revealed a moderately distended but diffusely tender abdomen, with a palpable mass in the hypogastrium. Her admission blood tests revealed significant elevation of C-reactive protein (CRP: 163 mg/L - reference value 0- 11 mg/L) and a moderately elevated total white cell count (12.36x10*9/L - reference value 4.00 - 11.00x10*9/L). Provisional diagnosis was that of suspected perforated viscus and hence an urgent abdominopelvic computed tomography (CT) scan with intravenous contrast was performed for further assessment. The CT scan revealed the presence of a 13x7.8 cm cystic lesion in relation to the root of mesentery, along with ascites extending into pelvis, suggestive of sealed perforation (*fig. 1*). After obtaining informed consent, the patient was scheduled for emergency diagnostic laparoscopy.

With the patient in supine position, a 2cm infraumbilical incision on the axis of linea alba was made and entry to the peritoneal cavity was achieved through standard open technique, allowing for the insertion of a 12 mm port. After the induction of the pneumoperitoneum, another two 5mm ports were placed under direct vision in the suprapubic region and in the left iliac fossa, laterally to the inferior epigastric vessels. Intraoperatively, a large, oedematous thick-walled but intact, smooth mesenteric cyst was noted with no signs of perforation or adhesions to suggest previous inflammation. The cyst splayed mesenteric

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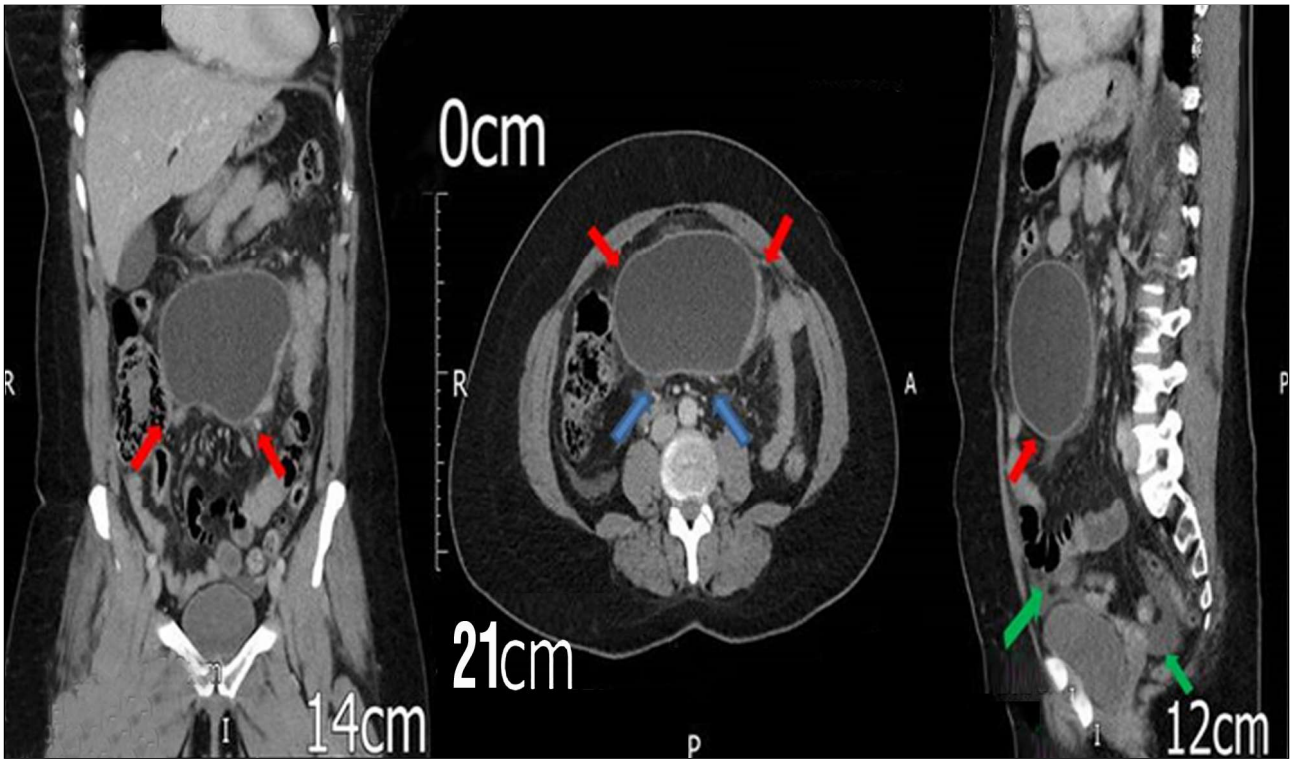

Figure 1 - Compilation of the preoperative CT scan images, showing a large cystic lesion in close proximity to the mesenteric root (blue arrows), with extension to the hypogastrium (red arrows), with presence of free fluid in the pelvis (green arrows)

vessels and there were no enlarged lymph glands or obvious signs of malignancy. No other pathological findings were noted after diligent laparoscopic assessment of the abdomen and pelvis. After a thorough warm water lavage and suction, a cystotomy was made to aspirate the viscous, chylous contents of the cyst before carefully deroofing part of its anterior wall using monopolar hook diathermy (*fig. 2*), avoiding collateral injury to the adjacent mesenteric vessels. The specimen was sent for histopathological analysis. A sample of the aspirated chyle was also sent for biochemical and microbiological analysis. The cyst's cavity was lavaged and satisfactory haemostasis secured. No attempt was made to excise the adherent posterior wall to avoid damage to underlying structures and risk major small bowel devascularisation at the root of the small bowel mesentery. The cavity was then filled with omentum to prevent internal small bowel herniation and cyst recurrence. The intraoperative decision to generously deroof rather than completely excise was based primarily on its macroscopically benign appearence as well as the normal appearances of the adjacent small bowel and mesentery. After further lavage of the abdomen and pelvis a non-suction 20 French drain was placed in the pelvis. The pelvic drain was removed on postoperative day 5 and the patient was discharged in a stable condition after an uneventful recovery.

The histology of the resected cyst wall revealed the presence of an inflammed benign mesenteric cyst with no other sinister pathology, while the aspirated fluid was confirmed to be chyle, with a triglyceride count greater than 250 nmol/L; no pathological micro-organisms were detected in the chyle and peritoneal fluid samples, including negative stains and culture for mycobacteria. Despite its rarity, symptomatic chylous mesenteric cyst can be safely managed laparoscopically, with both diagnostic and therapeutic intent (1,2). In absence of macroscopical concerns of malignancy, wide deroofing of the cyst wall and omental packing of the residual cavity can be curative and provide adequate tissue sample for confirmatory histopathology, avoiding the risk of iatrogenic mesenteric devascularising injury.

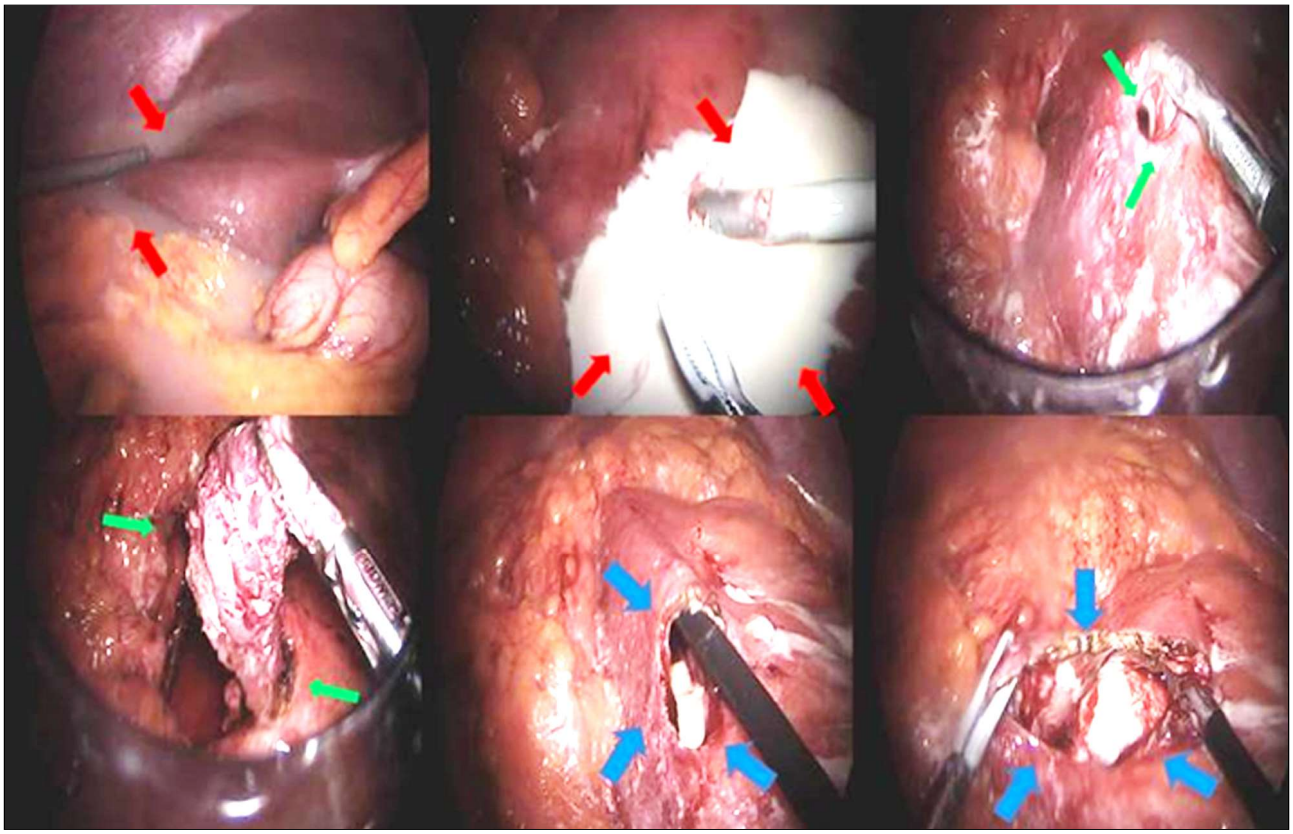

Figure 2 - Compilation of the intraoperative images, demonstrating the key steps of the laparoscopic deroofing procedure – aspiration of chylous ascites (red arrows), excision of the dome of the mesenteric cyst (green arrows) and demonstration of the final wide deroofing (blue arrows)

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Conflict of interest

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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Data availability statement

All data referred to in the study reside within the manuscript and supplementary material

Key Clinical Message

Emergency laparoscopy is a safe diagnostic and therapeutic approach for acutely symptomatic chylous mesenteric cysts.

Author contributions

GZ & CS: contributed to the clinical data collection and preparation of the manuscript; GZ contributed to the review of the literature and preparation of the manuscript; CS & KZ: contributed to the design of the case report presentation and performed the final revision of the manuscript.

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