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Laparoscopic complete excision of a large retroperitoneal cystic lymphangioma in an elderly patient: A case report

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Abstract
Retroperitoneal cystic lymphangioma (RCL) is an exceptionally rare benign tumor in adults, accounting for less than 1% of all lymphangiomas. Its non-specific clinical presentation makes pre-operative diagnosis challenging, often mimicking other cystic masses. Complete surgical excision is the gold standard treatment to prevent recurrence.
We present the case of a 75-year-old female patient with insulin-dependent diabetes mellitus who presented with chronic left lumbar pain. Imaging (CT and MRI) revealed a large 15x12x8 cm cystic mass in the left retroperitoneum, displacing the kidney and colon. Serum tumor markers were normal.
The patient was managed by a complete laparoscopic excision of the mass. The procedure was successful, with meticulous dissection of the cyst from the ureter and kidney, and extraction using a "puncture-in-the-bag" technique. The post-operative course was uneventful, and the patient was discharged on post-operative day 3. Histopathology confirmed a benign cystic lymphangioma. At 2-year follow-up, the patient remains asymptomatic with no signs of recurrence.
This case demonstrates that complete laparoscopic excision of a large retroperitoneal cystic lymphangioma is a safe, feasible, and effective approach, even in elderly and fragile patients. This minimally invasive strategy provides curative treatment while minimizing morbidity and shortening hospital stays.

Keywords: Case report, retroperitoneal cystic lymphangioma, laparoscopy, minimally invasive surgery, geriatric surgery

Introduction
Cystic lymphangiomas are rare, benign congenital malformations of the lymphatic system. They are predominantly found in the head and neck region (75%) and are typically diagnosed in childhood. Retroperitoneal localization is exceptionally rare, accounting for less than 1% of all lymphangiomas, making its discovery in adult patients an uncommon clinical scenario.
Pre-operative diagnosis of retroperitoneal cystic lymphangioma (RCL) remains challenging. Clinical presentation in adults is often non-specific, commonly involving vague abdominal pain or a palpable mass. Radiologically, these lesions must be differentiated from a wide spectrum of other retroperitoneal cystic masses, including pancreatic pseudocysts, mesenteric cysts, duplications, and, most importantly, malignant cystic neoplasms.
The definitive treatment and gold standard for RCL is complete surgical excision, as incomplete resection is associated with a high rate of local recurrence. With advances in minimally invasive techniques, laparoscopic excision has been increasingly demonstrated as a safe and effective approach. This approach offers significant benefits, including reduced postoperative pain, shorter hospital stays, and faster recovery, which are particularly advantageous for elderly or fragile patients.
We present the case of a large retroperitoneal cystic lymphangioma in a 75-year-old diabetic patient, which was successfully managed by complete laparoscopic excision. This report highlights the diagnostic challenges of this rare entity and reinforces the feasibility and safety of a minimally invasive approach in the fragile elderly population.
This case report has been reported in line with the SCARE Criteria.

Case presentation
A 75-year-old female patient, with a significant medical history of insulin-dependent diabetes mellitus, was referred to our department for chronic left lumbar pain persisting for over four months. She had no history of previous abdominal surgery.

On physical examination, the abdomen was supple, but a deep palpation of the left flank revealed a large, ill-defined, and slightly tender mass.

Contrast-enhanced computed tomography (CT) and magnetic resonance imaging (MRI) of the abdomen and pelvis were performed. These studies revealed a large cystic mass in the left retroperitoneum, measuring approximately 13,5x 12,1x 8cm. The mass exerted significant mass effect, displacing the descending colon anteriorly and the left kidney posteriorly. It extended inferiorly towards the psoas muscle. The cystic content appeared to be serous fluid, with thin, non-enhancing walls and no solid components, suggestive of a benign process.

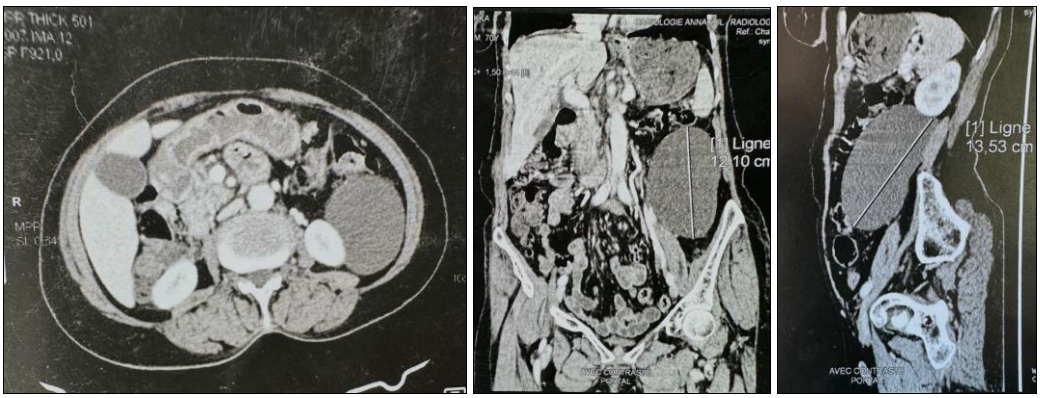

Fig 1: Abdominal CT scan showing a left retroperitoneal cystic mass.

The primary differential diagnoses included a retroperitoneal cystic lymphangioma, a mesenteric cyst, or a cystic duplication. Pre-operative laboratory tests, including serum tumor markers (CEA, CA 19-9), were all within normal limits.

Given the patient's age and diabetic fragility, a minimally invasive laparoscopic approach was planned to minimize surgical trauma and expedite recovery.

The procedure was performed under general anesthesia with the patient in a supine position. The surgical team (primary surgeon and assistant) was positioned on the patient's right side. A 10-mm umbilical port was placed using an open-Hasson technique, and pneumoperitoneum was established. Two 5-mm working ports were inserted, one in the midline and one in the left iliac fossa. Exploration confirmed a large, bulging cystic mass in the left retroperitoneum. The surgical strategy involved complete enucleation.

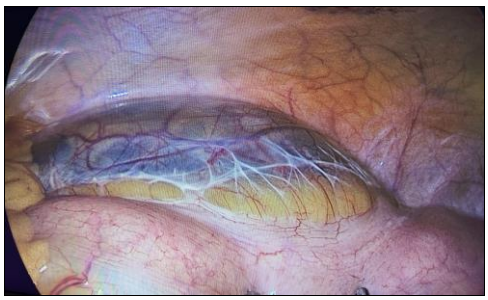

Fig 2: Perioperative image of laparoscopic exploration showing cystic left retro colic mass

First, the left parietal peritoneum was incised, and the descending colon was mobilized medially (a Toldt's fascia incision). Using a monopolar hook and atraumatic graspers, the cyst was meticulously dissected. The cyst wall was noted to be very thin. The dissection plane was carefully developed, separating the mass from the left ureter and the left kidney, both of which were clearly identified and preserved. A small vascular pedicle at the base of the mass, arising from the left mesocolon, was identified, ligated, and divided.

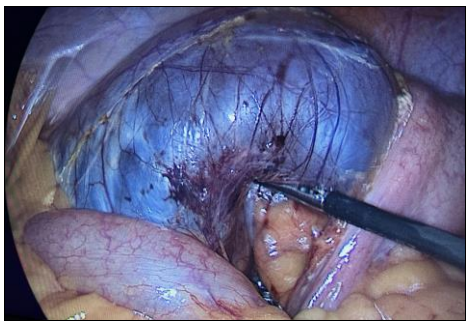

Fig 3: Peroperative image showing dissection of the mass after mobilization of the left colon

Once completely freed, the large cyst was placed in the left hypochondrium. Hemostasis and the integrity of the mobilized colon were confirmed. Due to the voluminous size of the benign-appearing cyst, the mass was placed into an endoscopic retrieval bag. The bag was brought to the umbilical incision. A 'puncture-in-the-bag' technique was used: a needle was passed into the retrieval bag to aspirate the serous fluid, decompressing the cyst. The collapsed bag containing the cyst wall was then extracted through the 10-mm umbilical port site. No surgical drain was left in place.

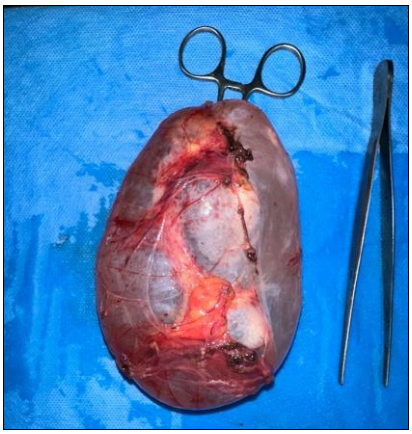

Fig 4: Image showing specimen after resection

The post-operative course was uneventful. The patient was discharged on post-operative day 3. Histopathological examination confirmed the diagnosis of cystic lymphangioma. At the 2-year follow-up evaluation, the patient remains asymptomatic, and a control abdominal CT scan showed no signs of local recurrence.

Discussion

The present case report describes the successful and complete laparoscopic excision of a large, symptomatic retroperitoneal cystic lymphangioma (RCL) in an elderly, diabetic patient. Our key findings the feasibility of a minimally invasive approach for a large mass in a fragile patient, a rapid post-operative recovery (discharge on day 3), and the absence of recurrence at 2-year follow-up provide a valuable addition to the existing literature on this rare condition. Retroperitoneal cystic lymphangioma is an exceptionally rare entity in adults, representing less than 1% of all lymphangiomas [1]. Its presentation is often non-specific, with vague abdominal or lumbar pain being the most common complaint, as seen in our patient and others [2]. This lack of pathognomonic symptoms, combined with radiological features that mimic other cystic lesions (such as mesenteric cysts, pancreatic pseudocysts, or duplications), makes a definitive pre-operative diagnosis challenging [3].

Imaging is crucial for defining the size and anatomical relationships, but the final diagnosis is nearly always reliant on histopathological examination [4].

The gold standard treatment for symptomatic RCL is complete surgical excision. This consensus is based on the high rate of recurrence (reported as high as 10%) associated with incomplete resection, simple aspiration, or marsupialization. Several authors have reported successful excision through traditional open approaches, such as laparotomy or lumbotomy. Richmond *et al.* described an open laparotomy for a giant RCL that required complex dissection from the portal structures, resulting in a 6-day hospital stay [5]. Similarly, the cases reported by Chaker *et al.* and Lahfidi *et al.* were also managed via open surgery [6, 4]. Our case, however, aligns with the growing evidence supporting the laparoscopic approach, as also reported by Shaheen *et al.* [7]. The primary challenge in our case was the combination of the lesion's large size (13,5x12cm) and the patient's advanced age and comorbidities (75-year-old, insulin-dependent diabetic). We demonstrated that a meticulous laparoscopic dissection, complete enucleation, and a "puncture-in-the-bag" technique for extraction are not only feasible but highly advantageous in this population. The minimally invasive approach directly contributed to the patient's uneventful recovery and short hospital stay (3 days), a significant benefit compared to the longer convalescence often associated with open surgery [8].

This case report underscores three key take-away lessons: (1) RCL must be included in the differential diagnosis of any large, cystic retroperitoneal mass in an adult, even in the elderly. (2) Laparoscopic excision is a safe, effective, and feasible approach for large RCLs, offering the significant benefits of minimal access surgery, particularly in fragile patients. (3) Complete surgical enucleation, whether open or laparoscopic, remains the cornerstone of curative treatment to prevent local recurrence, as confirmed by our 2-year recurrence-free follow-up. The main limitation of this report is that it is a single case; however, it adds strong support to the body of evidence favoring a minimally invasive strategy when anatomically feasible.

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