

CASE REPORT

A symptomatic cyst of the ligamentum teres of the liver: A case report

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INTRODUCTION

Ligamentum teres (or round ligament) of the liver is a cord-like ligament found within the falciform ligament on the inner surface of the anterior abdominal wall and represents a remnant of the umbilical vein, which is a connecting venous structure between the placenta and the umbilical portion of the left portal vein. It is located at the dorsal free margin of the falciform ligament.

Lesions of the liver ligaments are extremely rare and cysts of the falciform ligament have been previously reported^[1-3].

The aetiology of these cysts is not well understood yet and their clinical manifestations vary a lot. They may appear completely asymptomatic or may produce palpable masses and pain. The differential diagnosis in such cases includes benign or malignant tumors arising from the liver ligaments or the abdominal wall, fatty masses, disseminated cancer and hepatic lesions.

CT scan, although necessary, may not well define the nature and origin of these masses. Definite diagnosis is made based on laparotomy and pathologic examination of the surgical specimen.

We report a case of a symptomatic patient with a cyst of the ligamentum teres of the liver treated with total excision. The pathologic features of this cyst are also presented.

CASE REPORT

A 57-year old woman was referred to our department due to right upper quadrant pain and episodes of vomiting during the last 2 years. The pain was mild, experienced at irregular periods of time and had no relation to meals. The patient did not have any previous medical history. She was a non-smoker and did not receive any medication in a regular basis. Physical examination was unremarkable. Complete blood cell count, electrolytes,

Abstract

Cysts of the liver ligaments are extremely rare and cysts of the ligamentum teres of the liver have been sporadically reported in the literature during the last century. The present report describes a case of a symptomatic patient with a cyst of the ligamentum teres of the liver. The patient presented with right upper quadrant pain and indigestion during the last 2 years. Ultrasound and computed tomography scans revealed a water-density mass attached to the anterior abdominal wall, but definite diagnosis could not be reached. The cyst was completely excised during laparotomy. Cysts of the ligamentum teres of the liver, although infrequent, may produce clinical symptoms and require excision. Ultrasound and computed tomography scan preoperatively cannot rule out malignancy, thus exploratory laparotomy and total resection of these lesions are necessary.

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Figure 1 Ultrasound appearance of the cystic abdominal mass.



Figure 2 Abdominal CT scan with intravenous contrast media used showing a water-density mass attached to the anterior abdominal wall. A well circumscribed area of low attenuation in contact with the abdominal wall is identified.

eosinophil count, serum biochemistry and urinalysis were within normal limits. Levels of serous neoplastic markers, such as carbohydrate antigen 19-9 (CA 19-9), carcinoembryonic antigen (CEA), carbohydrate antigen 125 (CA 125), and α -fetoprotein (AFP) were normal as well. Anti-echinococcal IgM and IgG antibodies and viral markers for hepatitis B and C were negative. Chest X-ray was normal. Plain radiographs of the abdomen did not reveal any pathological entity. The patient underwent ultrasound examination (US) that showed a 4.7 cm \times 3.5 cm cystic mass on the anterior surface of the liver (Figure 1). CT scanning demonstrated the presence of a 5 cm \times 4 cm \times 7 cm solitary water-density mass, in contact with the right rectus abdominis muscle, showing no enhancement after intravenous contrast media injection (Figure 2). No ascites, lymphnodes or other intra-abdominal masses were found either in the liver or in the peritoneum.

The cyst was removed without rupture by a midline abdominal incision (Figure 3). The cyst's origin was at the attachment between the ligamentum teres and the anterior abdominal wall. It was neither drained nor aspirated during the procedure. An appropriate dissection plane between the cyst and the ligament could easily be found as it was not hard and adhesive. The exploration of the rest of the peritoneal cavity did not reveal any other lesions. Macroscopic examination showed a circumscribed serous cyst, 5 cm in diameter, with a thick fibrous wall of 1 mm. Microscopically, the wall of the

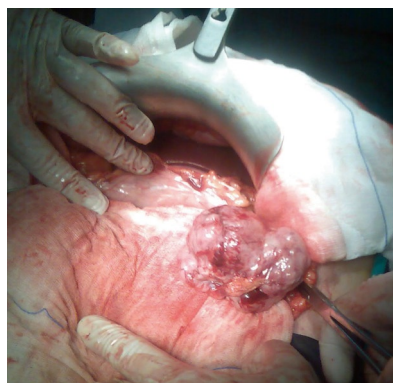


Figure 3 The cyst is shown originating from the ligamentum teres.

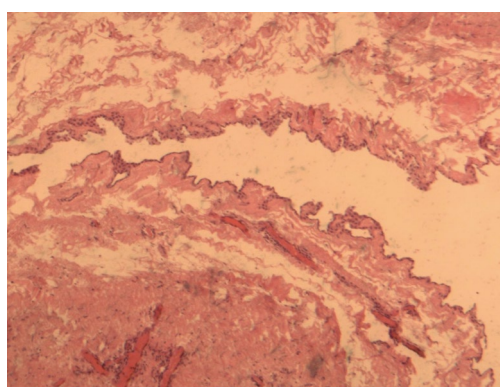


Figure 4 Hematoxylin-eosin staining of the cyst wall shows the single layered cuboidal epithelium (\times 40).

lesion was composed of a single layered cuboidal epithelium. No signs of malignancy were identified (Figure 4). The patient's postoperative course was uneventful. The patient was discharged on the second postoperative day. After 6 mo, the patient was well and in good condition with no further symptoms.

DISCUSSION

Unusual lesions reported in the falciform ligament and ligamentum teres of the liver are lipoma^[4-6], paraganglioma^[7], lymphangioma^[8] and leiomyosarcoma^[9-14].

Moreover, simple serous cysts of the falciform ligament^[1-3,15] and the ligamentum teres of the liver have been sporadically reported in the literature^[16-20].

The etiology of liver ligament cysts is diverse and the causes have been classified into primary and secondary^[1]. Primary cysts arise during development from congenital defects of mesenteric origin^[21]. Secondary cysts are the result of infections (echinococcus, abscesses), trauma (hematomas and biliary leaks) and neoplasms with cystic degeneration. Partial obliteration of the umbilical veins has also been reported to cause falciform ligament cysts^[20]. Pathology report suggested the congenital origin of the cyst in our case.

The main symptoms of these patients are unclear and have been reported to include vague abdominal pain and indigestion. Physical examination may sometimes demonstrate a palpable right upper quadrant mass as well.

Our patient was treated with laparotomy to reach a definite diagnosis. Intraoperative findings included a solitary cyst, 5 cm × 5 cm in size, originating from the round ligament of the liver, which was attached to the right rectus abdominis muscle. It was easily dissected since it contained no hard adhesions to the abdominal wall and totally removed. Laparotomy allowed complete inspection of the abdomen to exclude other intra-abdominal masses or lymphnodes.

Ultrasound and computed tomography scans are essential to identify the solid or cystic nature of such lesions but cannot provide a definite diagnosis. In a similar previous report, a falciform ligament cyst has been suggested at CT by a water-density mass at the caudal aspect of the left intersegmental fissure^[3]. Nevertheless, a significant number of other benign or malignant lesions have been previously presented as mentioned above.

As a result, the differential diagnosis of a right upper quadrant mass includes several clinical entities and radiological findings can only imply but not ensure a definite diagnosis.

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