Primary Hydatid Disease in a Retroplaced Gallbladder

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Abstract

A 60-year-old man with abdominal distension, fever, vomiting and pain on the right upper quadrant of the abdomen was admitted to our hospital. US revealed a well circumscribed lesion of mixed echogenicity. CT revealed hypoplasia of the right liver lobe, and a cystic mass with solid components replacing a retroplaced gallbladder. On $T_1$-weighted MR images the lesion had low signal intensity and presented mild peripheral post-contrast enhancement, while on $T_2$-weighted images the periphery was of moderately high signal intensity and the centre of fluid-like, high signal intensity. Adjacent liver parenchyma had relatively high signal intensity on $T_2$-weighted images. The patient underwent exploratory laparotomy, and a hydatid cyst of the gallbladder that was inflamed was evidenced.

Key words

Gallbladder - hydatid cyst - MRI

Background

Hydatid disease involvement of the gallbladder is rare, and it is usually the result of either intrabiliary rupture of a hepatic hydatid cyst or of a direct cyst rupture into the gallbladder (1-3). A primary hydatid cyst of the gallbladder is even more uncommon, with only a few cases reported in the literature (4,5).

A case of primary hydatid cyst of the gallbladder is described here.

Case report

A 60-year-old man was admitted to our hospital with abdominal distension, fever (38.0–39.5°C), tenderness, nausea, vomiting, and pain at the right upper quadrant of the abdomen for 10 days prior to admission. Laboratory tests revealed total bilirubin 0.9 mg/dl, elevated levels of aspartate transaminase (117 IU/l), alanine transaminase (169 IU/l), and alkaline phosphatase (132 IU/l), and a white blood cell count of 28,216/ml. Tumor markers were CA 125 = 97.1 U/ml and CA 19-9 = 30.3 U/ml. Previous medical history was unremarkable.

Abdominal US revealed a well-defined, oval, space-occupying lesion of mixed echogenicity measuring 8x6 cm, which was considered compatible with a hydatid cyst (Fig.1). The gallbladder was not found at its normal anatomical site, nor at any other site. There was no evidence of bile duct dilatation. Subsequently, a spiral CT examination was performed with 8 mm collimation, 1.4 pitch, 5 mm reconstruction intervals, pre and post-contrast media administration intravenously. A mixed cystic and solid lesion was disclosed and it was considered an abnormal gallbladder with a slightly thickened wall, septations and solid components, as well as high fluid attenuation values (Fig.2). A calcified gallstone was seen within the lesion. The duodenum appeared edematous. The liver had an unusual morphology with hypoplasia of the right lobe. No lymph node enlargement and no other abnormalities were seen. Gallbladder carcinoma was considered in the CT differential diagnosis and MRI was performed using an 1.0 Tesla Magnet unit and a body coil. On $T_1$-weighted MR images the lesion had low signal intensity, while on $T_2$-weighted images the periphery was of moderately high signal intensity and the centre of fluid-like, high signal intensity (Fig.3a,b). Adjacent liver parenchyma had relatively high signal intensity on $T_2$-weighted images that might be related to inflammatory or neoplastic infiltration. There was only minimal gadolinium uptake at the periphery of the lesion on post-contrast $T_1$-weighted images (Fig.3b).

Exploratory laparotomy was decided. Hard adhesions were found surrounding the gallbladder attributed to previous inflammation. There was also evidence of a recent inflammation process. After careful preparation of the gallbladder, a frozen section of the wall was taken and the pathology report suggested echinococcal cyst wall.
The abdomen was then carefully packed with pads soaked in hypertonic saline solution to avoid spillage of the echinococcal fluid, and about 20 ml of fluid was aspirated. Cholecystectomy was performed. Because of the hard adhesions, it was difficult to prepare the common bile duct. No other lesion was detected in the abdomen. Histopathology of the surgical specimen confirmed the diagnosis of a gallbladder hydatid cyst.

The patient recovered uneventfully and was discharged on the 12th postoperative day. Albendazole (800 mg per day) as adjuvant therapy was administered for 4 months postoperatively. At 2-year follow-up the patient was doing well with no detectable abnormality on CT and US.

**Discussion**

Diagnosis of hydatic disease with an uncommon primary location may be a diagnostic problem even in regions where the disease is endemic (6). Ultrasound or CT may detect hydatid disease in the form of purely cystic lesions, or when floating membranes, daughter cysts, or vesicles are recognized (7). However, atypical imaging findings and uncommon primary location may interfere with specific diagnosis. The role of MRI in diagnosing gallbladder hydatid disease has not been evaluated yet, and MR imaging findings have not been previously described, to the best of our knowledge.

In the presented case a normal gallbladder was not identified on imaging examinations, namely US, CT and MRI. Hypoplasia of the right liver lobe, as in our patient, may be associated with a retroplaced gallbladder (8); a posterior-inferior position of the gallbladder in relation to liver parenchyma is expected in such cases. In our patient, the location of the space-occupying lesion on CT suggested that the lesion replaced the gallbladder fossa of a retroplaced gallbladder. The CT appearance of the mass, with cystic and solid components and a gallstone within it, gave rise to the possibility of a gallbladder carcinoma (9) that could not be excluded on MRI. On the contrary, the preceding US examination did not indicate a malignant lesion and suggested hydatid disease based on the “cyst within a cyst”
appearance. Subsequently, an exploratory laparotomy was decided and a primary gallbladder hydatid disease was diagnosed on pathology.

The presented case underlines the difficulties in diagnosing atypical forms of primary hydatid disease in an unusual location. Gallbladder hydatid cyst may demonstrate imaging findings indistinct from a gallbladder carcinoma on CT, and one should be aware of this appearance, especially in regions where the disease is endemic.

References