



Case Report

Compression of Left Portal Vein By Giant Hydatid Cyst Extending from the Caudate Lobe to the Foramen of Winslow

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Abstract

Hydatid disease may affect any organ or tissue, but the most involved organ is the liver. Despite the fact that it is an asymptomatic disease in most patients, about one-third of patients will have a complication. The most common complications of hydatid disease are cystobiliary communications, superinfection, cyst rupture, and mass effect induced complications. Primary aim of this study is to present this case study, 27 years old female patient, regarding a hydatid cyst originating from caudate lobe of the liver, extending to the foremen of Winslow and resulting in pressure on the left portal vein with heterogeneous liver parenchyma seen on computed tomography; as extensive, causing abdominal pain and treated before causing portal venous thrombosis or portal hypertension. The patient underwent cholecystectomy, pericystectomy and received preoperative and postoperative albendazole treatment. In the contrast enhanced computed tomography taken five months after the surgery, it was observed that the heterogeneity in the liver parenchyma completely resolved. After reviewing the literature, there were no studies showing early treatment of such cases before complications occurred.

Keywords: Caudate lobe, compression, hydatid cyst, liver, portal inflow

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Hydatid disease is caused by a cestode class tailed family parasite; about 95% of humans hydatid disease is caused by echinococcus granulosus and the definitive host is sogged.^[1] Infection of humans occurs by accidental ingestion of echinococcus granulosus from dog feces and results in hydatid disease. When eggs are ingested by an intermediate host like human, they are taken by the gastrointestinal system in humans to the portal vein and then to the liver developing the characteristic hydatid cyst.

Most cysts adhere to hepatic sinusoidal membranes, in most cases larva eggs bypassing those membranes can enter the systemic circulation and cause lung, splenic and brain cysts.^[2,3] Asymptomatic diagnosed cysts may increase in size, collapse, calcify or remain asymptomatic in the same patients according to size, location and the relation to surrounding

structures with a complication rate around 30%-50%.^[4,5] The most common symptom is nonspecific abdominal pain. Other symptoms include itching and jaundice with diagnosis achieved by radiological studies, serological and immunological tests. Although liver function tests may be normal in biliary complications, cholestasis enzymes or transaminases are elevated; the ELISA test has 85% sensitivity.^[6] The symptoms and signs of hydatid cyst are related to cyst size, site and surrounding structures. Average growth in cyst size is 10 mm in the first 6 months then 20-30 mm yearly.^[7] Increasing cyst size may affect hepatic vein, portal vein, interahepatic or extrahepatic biliary structure, right diaphragm and kidney. The aim of this case report was to present a hydatid cyst originating from caudate lobe of the liver, extending to the foremen of Winslow and resulting in pressure on left portal

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vein with heterogeneous liver parenchyma seen on magnetic resonance imaging; as extensive causing abdominal pain and treated before causing portal venous thrombosis or portal hypertension.

Case Report

A 27-year-old female patient applied to a private health institution with the complaints of nonspecific right upper quadrant pain and itching. Since hydatid cyst disease was detected in radiological analysis, albendazole (10 mg/kg/days) treatment was started. The patient, whose complaints did not resolve with anthelmintic treatment, was referred to our center for surgical treatment. In order to ensure the diagnosis of a hydatid cyst disease, contrast enhanced computed tomography was done and findings were 80x80 mm cyst with detached cystic membranes (lily sign) Gharbi II originating from segment 1 (caudate lobe) and extending to segment 7-8 superiorly and diaphragm anteriorly with portal confluence and heterogeneous parenchyma changes seen in the left lobe of the liver compressing left portal vein (Fig. 1). Echinococcus IgG ELISA was positive for hydatid disease. The patient was kept on preoperative anthelmintic treatment to prevent a postoperative recurrence and reduce intracystic pressure. Intraoperative findings consistent with 100x70 mm cystic lesion, displacing left portal vein, hepatic artery and common bile duct, superiorly. Perihepatic area was surrounded with wet gauze 3% saline to prevent seeding. First hiller dissection,



Figure 1. A cystic lesion located in the caudate lobe that disrupts the contrasting pattern on the left side of the liver by compressing the portal vein.

cholecystectomy and cholangiogram were performed. Cyst content was aspirated through an incision on the anterior wall of the cyst, followed by partial pericystectomy (Fig. 2). Cholangiogram was repeated to check if there is any biliary communication with the cyst cavity; after hemostasis drain

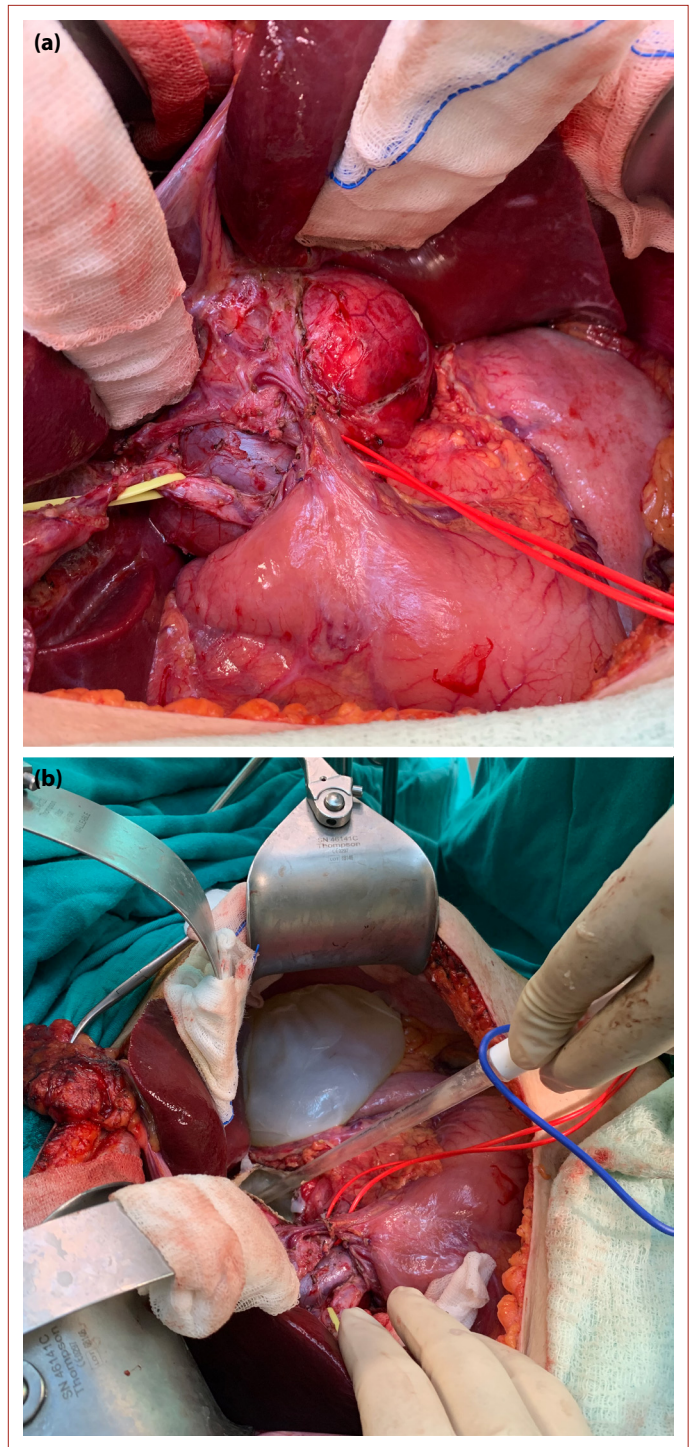


Figure 2. Images obtained from different stages during surgery. (a) The structure of the cyst that compresses the hilar structures posteriorly (b) Removal of the daughter vesicle in the cyst after the anterior wall is opened.

was inserted. Patient was discharged on the 4th postoperative days on albendazole for six weeks, 12 months later there were no signs of recurrence on computed tomography (Fig. 3), 36 months later patient was doing well without signs of recurrence or complications.

Discussion

Hydatid disease is an endemic disease in sheep and cattle raising countries like turkey, Spain Middle East, Africa and Greece.^[8] As intermediate hosts, human beings are infected by ingested larva eggs through food contaminated by dog's feces. The first step in physical diagnosis is examination and patient history in which most patients with hydatid disease remain asymptomatic as the cyst grows slowly; some patients develop symptoms due to cyst size, number or location. These symptoms might be caused by the mass effect of the cyst on the biliary tree, vascular structures or surrounding organs. A common complication of hydatid Cyst is rupture of the biliary tree, secondary infection, anaphylactic shock, obstruction of the biliary tree or pres-



Figure 3. Control CT images taken at the sixth postoperative month. Heterogeneity in the left lobe of the liver appears to have disappeared.

sure on vascular structures. Cyst fluid contains antigens that could cause fever, urticarial or eosinophilic reactions. Anaphylactic shock, a well-known complication of hydatid disease, occurs 1-16% of patients who suffered from intra-peritoneal ruptures,^[9] although it is really common to see complications related to mass effect of the large hydatid cyst when the hydatid cyst is located on the hepatic hilum like portal vein thrombosis, Budd-Chiari syndrome, segmental atrophy secondary biliary cirrhosis and duodenal stenosis. In our case, exophytic hydatid cyst caused pressure on the left portal vein but was treated before causing any other liver complications. Hydatid cyst diagnosis was achieved by patient history, physical examination, laboratory investigations and radiological studies. Hydatid cyst was classified radiologically according to ultrasound findings in Gharbi classification: Type 1; pure cystic fluid collection, Type 2; fluid collection with membrane separation, Type 3; fluid collection with septa, Type 4; heterogeneous pattern, Type 5; completely calcified.^[10] In our case, the most common was membranes separation, and we considered it as gharbi type II; symptomatic patients should be diagnosed and treated early to prevent complications; treatment modalities include medical percutaneous drainage and surgical interventions. Surgical interventions should be targeted at removing the cyst and preventing recurrence with minimal rates of morbidity and mortality. Cyst type and anatomical location should be considered when choosing treatments modalities. Medical treatment, open surgery, PAIR (punction- aspiration- injection- reaspiration) or laparoscopic surgery can be considered in the treatment of hydatid cyst disease.^[11,12] In our case, the cyst was exophytic, and we opted for pericystectomy, surgical treatment was divided into Conservative and radical open and minimally invasive, and the choice was based on cyst size, type, Location, surgeon experience and institution's facilities; it should be mentioned that there is no difference between open and minimally invasive surgeries according to recurrence rate. The ideal treatment of a complicated hydatid cyst is preoperative medical treatment 1 to 2 weeks before any surgical intervention unless there is an emergency indication for an intervention. The best treatment of a complicated hydatid cyst is surgery and radical surgery for exophytic cysts; a radical approach like lobectomy, segmentectomy or pericystectomy has a higher morbidity and mortality rate compared to conservative treatment which is the best in regards to recurrence. As a result, in countries like turkey in which hydatid disease is considered endemic, hydatid disease should be one of the differential diagnoses when dealing with patients with vague abdominal pain. Radiological studies are cornerstone in devising a diagnosis and treatment plan for patients. It is preferable to keep

patients on albendazole 10 -14 days preoperatively and 6-8 weeks postoperatively (continuous and cyclic). Conclusion after reviewing the literature, there were no studies showing early treatment of liver hydatid cysts with a high risk of complications before complications occurred.

Disclosures

Informed consent: Written informed consent was obtained from the patient for the publication of the case report and the accompanying images.

Peer-review: Externally peer-reviewed.

Conflict of Interest: None declared.

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