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Case Report

Endoscopic removal of biliary tree echinococcal cysts

T.S. Papavramidis, I. Pliakos, K. Triantafillopoulou, N. Michalopoulos, M. Polyzonis, K. Sapalidis, I Kesisoglou, S. Papavramidis

SUMMARY

Liver echinococcal cysts typically present as asymptomatic masses. In many cases, the cyst may be ruptured into the gallbladder or the biliary tree and may present with symptoms of biliary colic, jaundice or anaphylaxis. The present case referrs to a liver echinococcal cyst ruptured into the biliary tree which led to jaundice and has been treated with ERCP. A 54 years-old female patient from a rural area, presented to the emergency department with right upper quadrant pain and jaundice. In her anamnestic the patient had a known echinococcal cyst in segment V of the liver. The cyst was diagnosed in a previous abdominal control due to a prior episode of cholecystitis 5 years ago. The biochemical and hematological screening revealed leucocytosis with elevated PMNs, transaminasemia and bilirubinemia. The echogram revealed dilation of the hepatic and the common bile duct that contained echogenic material without an acoustic shadow. An ERCP confirmed suspicion of secondary echinococcal cysts within the common bile duct and after sphincterotomy cysts were thoroughly removed by the use of an endoscopic balloon. In cases were echinococcal cyst ruptures into the biliary tree, operative treatment is not the only option. When no septic symptoms are present, ERCP and sphincterotomy could be the first choice in removing the echinococcal cyst debris from the common bile duct.

Key words: Biliary disease, echinococcal disease, biliary endoscopy, ERCP.

3rd Department of Surgery, AHEPA University hospital, Aristotle University of Thessaloniki

Author for correspondence:

Theodossis S Papavramidis, 30 Korytsas Str., Panorama, 55236 Thessaloniki, Greece, e-mail: papavramidis@hotmail.com

INTRODUCTION

Canines are the primary hosts of Echinococcus granulosus, since the adult worm resides in their intestines. Humans are the intermediate host in whom the parasite forms hydatid cysts. The commonest site of hydatid cyst formation is the liver, followed by the lung, the kindey, the spleen and the other organs.[1]

Most of patients remain asymptomatic for years. However, about 25% of the cases experienced a spontaneous hydatid cyst rupture into the biliary tree, which leads to acute symptomatology. Upon rupture, the elements of the cyst drain into the biliary tree causing obstruction (intermittent or complete) of the common bile duct, resulting in the clinical manifestation of obstructive jaundice, cholangiitis, biliary colic, allergic reaction and sometimes cholangiolytic abscesses.[2]

The present case describes a patient who referred to the emergency department for acute symptomatology from the biliary tree due to an echinococcal cyst which ruptured in the biliary tree.

Case presentation

A fifty-four-year-old female patient from a rural area presented to the emergency department with right upper quadrant pain and jaundice. She had a history of an episode of acute cholecystitis 5 years ago, during which an echinococcal cyst in the segment V of the liver was discovered.

Biochemical and hematological screening on the present admission revealed leucocytosis with elevated PMNs, transaminasemia and bilirubinemia. Ultrasound screening revealed a dilation of the common hepatic and the common bile duct, which contained echogenic material without an acoustic shadow. Since echinococcal debris in the biliary tree was suspected, ERCP was performed in order

for the diagnosis to be confirmed. Additionally, in case of echinococcal debris, any communication of the biliary tree with the pre-existing echinococcal cyst could be revealed and the biliary tree could be cleared by removing the daughter echinococcal cysts. ERCP revealed a dilated common bile duct with filling defects of varying size (Figure 1), but no obvious cystobiliary communication was proved. Endoscopic sphincterotomy was performed and a balloon was used for extraction of the remaining echinococcal debris and daughter cyst. This endoscopic manoeuver immediately resulted in the amelioration of both clinical and laboratory profile of the patient, thus surgical intervention was not considered necessary at the time. The patient was put on prophylactic medication with albendazole [15mg/kg/d] for 3 weeks.

Ever since ultrasound control of the patient every year, for the last ten years, was performed proving that the patient was disease free.

DISCUSSION

Hydatid cyst is a parasitic disease mainly caused by echinococcus granulosus. In humans the most commonly infected organs are the liver and the lung. An enlarged cyst may compress the surrounding parenchyma, and the larger the radius the higher the intracystic pressure. It may accidentally be ruptured due to trauma, effort, coughing or vomiting.[3]

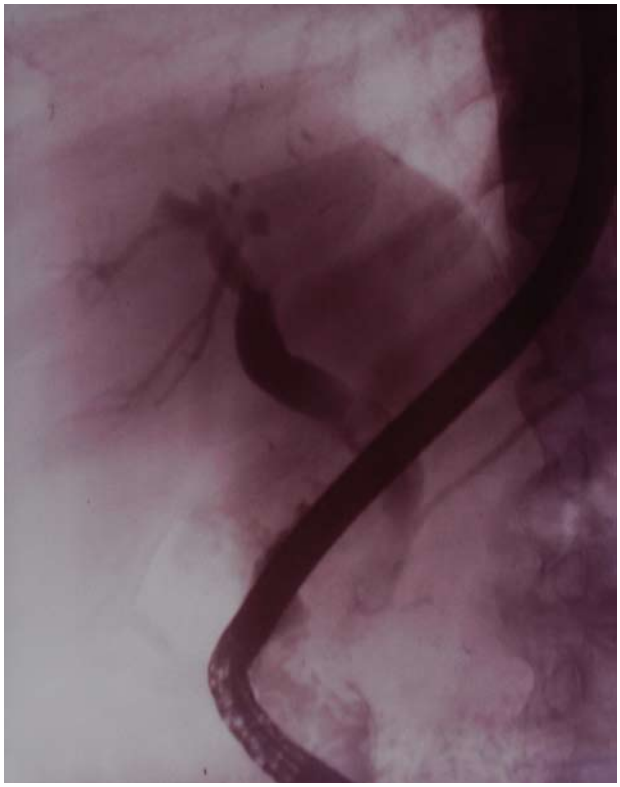

Figure 1. ERCP showing dilatation of the hepatic and the common bile duct with filling defects of varying size.

The types of echinococcal cysts ruptures are three: (a) contained, when the endocyst is torn but its content is confined within the pericyst, (b) communicating, when a tear of the endocyst happens with loss of the cyst content via small biliary ducts and (c) direct, when a tear of both endocyst and pericyst allows the cyst content to spill into the peritoneal or pleural space.[4] In the present case a communicating rupture of the echinococcal cyst occurred causing spillage of the content of the echinococcal cyst into the gastrointestinal tract via the biliary tree.

Liver echinococcal cyst usually remains asymptomatic. However, when an intrabiliary rupture occurs, debris works as a stone thus causing symptoms such as transaminasemia, jaundice, biliary colic and cholangiitis.[4] Rarely allergic reactions, acute pancreatitis or septicemia may occur. In the present case symptomatology in correlation with the anamnestic of hepatic hydatidosis led to the confirmation of a diagnosis of echinococcal cyst rupture in the biliary tree.

The radiologic findings of intrabiliary rupture include direct and indirect signs.[5] The only direct sign of rupture is visible communication between the cyst and the biliary tree. Although the probability of rupture is very high in such a case, it is prominent 33% of cases of ruptured cysts.[3] Deformation of a cyst suggests decreased intracystic pressure that probably means leakage of intracystic material and this may be the only indirect sign of intrabiliary rupture. This finding, although frequent enough, is not specific, since cyst deformation can be a result of medical or surgical treatment and does not necessarily indicate rupture. Thus, collapsed or decreased cyst in the follow-up of untreated patients may be a more significant sign of rupture. Additionally, abdominal ultrasonography usually establishes the diagnosis of rupture, especially when a dilated biliary tree is seen in association with hydatid cysts in the liver.[6,7]

Treatment of hydatid disease usually involves antihelminthic therapy (albendazole) combined with surgical resection of the cyst. However, endoscopy plays a significant role in the nonsurgical management of intrabiliary rupture of the hydatid, as well as in the case of postoperative biliary complications before surgery.[8-10] In patients presented with obstructive jaundice or cholangi-

itis, endoscopic sphincterotomy in combination with extraction of the cysts and membranes using a Dormia basket or a balloon catheter may result in final treatment.[11,12] Saline irrigation of the bile duct is considered as a necessary manoeuvre to flush out the hydatid debris and small daughter cysts.

In the present case, and since no obvious communication between the biliary tree and the hydatid cyst was seen, balloon extraction of the cysts and membranes combined with albendazole was the definite treatment. No recurrence was observed 10 years after the initial treatment.

CONCLUSIONS

Rupture of a hepatic hydatid cyst into the biliary tree is not a common complication. Usually, it leads to biliary colic, cholangiitis and jaundice. After imaging determination of a filled common bile duct, ERCP-EPT is an option both for diagnosis and treatment. In this way, and in combination with medication, further surgical treatment may not be required.

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