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Tube-like echogenic structures in the common bile duct caused by spontaneous rupture of hepatic hydatid cyst

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SUMMARY

Rupture of hepatic hydatic cyst into the biliary tree results in clinical picture of obstructive jaundice because of obstruction of common bile duct with hydatic material. Detection of nonshadowing intraluminal structures in the bile duct may complicate the diagnosis since it resembles other biliary disorders such as ascariasis, stone or infection.

Key words: Hydatid disease, common bile duct, ultrasonography

ÖZET

Hepatik kist hidatiklerinin spontan rüptürü sonucu koledokta izlenen lineer ekojeniteler

Karaciğer hidatik kistlerinin safra yollarına açılması ve kist içeriğinin koledoğu tıkaması sonucu, klinik olarak tıkanma sarılığı tablosu gelişir. Sonografik olarak koledok içerisinde izlenen gölge oluşturmayan lineer ekojeniteler; askariaz , taş ya da enfektif patolojilerle karışarak tanısal güçlüklere neden olabilir.

Anahtar terimler: Kist hidatik, koledok, ultrasonografi

INTRODUCTION

Spontaneous rupture of hydatic cyst into the biliary tree, with resultant obstruction of common bile duct with the hydatid material, is a potentially life-threatening complication that may also cause diagnostic difficulties. Among the complications of hydatid liver disease, spontaneous cyst rupture into the biliary tract is unusual, occurring in 3.2 to 17% of cases (1). Linear parallel intraluminal structures in the bile duct may complicate the diagnosis since it resembles other biliary disorders such as ascariasis, stone or infection. We would like to stress the differential diagnosis of tube-like nonshadowing echogenic structures in the common bile duct by reporting a case.

CASE REPORT

A 26-year-old woman admitted for pain in the upper abdomen, occasional vomiting of 2 weeks duration, and suffering from jaundice for 5 days. She was pregnant in the 20 weeks duration. Upon admission, the patient was found to be toxic and jaundiced. The liver was found to be tender. The gallbladder was palpable. Routine investigations did not yield any significant findings except the serum bilirubin level which was 5.36 mg/dl. Sonography revealed dilated intrahepatic biliary radicles and a cyst measuring 5.2 x 4,1 cm in size in the left lobe of the liver that related to the dilated intrahepatic bile duct, and a hydrops gallbladder as well as extremely dilated common bile duct measuring 3 cm in diameter while showing an increased echogenicity with some linear parallel intraluminal structures (Figure 1). Upon exploration, the common bile duct was found to be grossly dilated, and filled with hydatid laminated membrane, gelatinous material and debris.

DISCUSSION

Rupture of the hydatic cyst of the liver into the biliary tract gives rise to discharge of potentially infected fluid into the bile, and also the passage of germinative membrane of the hydatic cyst into the common bile duct. In view of the physiological narrowing of the common bile duct at its junction with the duodenum, daughter cyst and membranes have a tendency to remain lodged in the common bile duct, causing obstruction of the biliary outflow (2).

Before the introduction of noninvasive imaging modalities such as ultrasonography or magnetic resonance cholangiography, preoperative diagnosis of perforated hydatid cyst with passage of contents into the biliary tract was difficult and based on clinical manifestations. Definitive diagnosis was limited to the surgical expolaration and intraoperative cholangiography. Camunez et al. (3) reported some ultrasound criteria for diagnosis of

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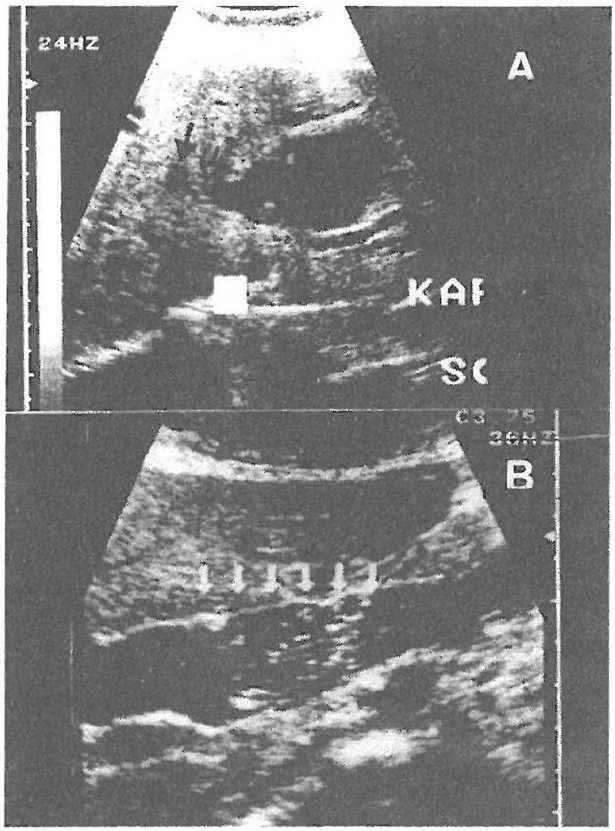

Figure 1. Sonography show A. a uniocular cyst with irregular echogenic areas in the left lobe of the liver. Note the relationship between the cyst (open arrow) and a dilated bile duct (closed arrow). B. Increased echogenicity with some linear parallel intraluminal structures in dilated common bile duct (arrows).

perforated hydatid cyst with passage of contents into the biliary tract; 1- detection of complicated hydatid cyst of the liver which is often multivesicular or has multiple septa and/or irregular echogenic areas in its interior, 2- identification of communication between the cyst and biliary tract, 3- visualization of intra- and extrahepatic biliary tract dilatation, 4- a common bile duct occupied by echogenic material without accompanying sonic shadow, and 5- visualisation of daughter cyst in the biliary tree. Among them, ultrasound identification of communication between the cyst and biliary tract is particularly pathognomic for cyst perforation into the biliary tree.

Communication between a hydatid cyst of the liver and biliary tract results in a clinical picture of obstructive jaundice because of occupation of the extrahepatic biliary tract by intracystic material (3). Mittal et al. (4) reported hydatid disease was responsible for jaundice in 2.25% of the 157 cases of the surgical jaundice that they studied, and only 15.4% of whom were due to intrabiliary rupture. The cause of jaundice may also occur as a result of the pressure of the cyst on the biliary passages and this pressure as a more frequent cause of jaundice than the actual intrabiliary rupture (5).

Sonographic appearance of linear parellel intraluminal structures in the bile duct may resemble biliary ascariasis which also typically lie parellel with the long axis of the bile duct and if multiple, they may completely fill the bile duct (5). Apart from biliary ascariais, the differential diagnosis of nonshadowing echogenicities within the common bile duct includes nonshadowing calculi, biliary sludge, pus, blood clots, and polipoid tumors of the bile duct. Calculi, sludge, pus, and thrombus are expected to be so discretely tubular, and should also appear more amorphous.

Endoscopic sphincterotomy is the treatment of choice for the management of hydatid cysts that have ruptured into the biliary tract causing obstructive jaundice. The treatment consisted of endoscopic sphincterotomy, cyst material extraction and hypotonic saline lavage via a nasobiliary catheter (6). In some cases, a biliary prosthesis may be required (7).

In conclusion, rupture of hepatic hydatic cyst into the biliary tree, with resultant obstruction of the common bile duct by the hydatid material should be considered in the differential diagnosis of tube-like nonshadowing echogenic structures in the common bile duct especially in epidemic areas. Concomitant detection of hydatic cyst cavity on the hepatic ultrasonography examination is helpful in the diagnosis of hydatic ruptured into the biliary system.

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