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Visual Diagnosis in Emergency Medicine

INTRABILIARY RUPTURE OF HEPATIC HYDATID CYST LEADING TO BILIARY OBSTRUCTION, CHOLANGITIS, AND SEPTICEMIA

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INTRODUCTION

Hydatid disease is caused by the infestation of a parasite originating from an *Echinococcus* strain. The liver is the most frequently affected organ and many patients have a uncomplicated clinical course and treatment. However, complicated cysts can be confusing in the diagnosis and detection of complications. Intrabiliary rupture, also known as cystobiliary communication, is the most common and serious complication of hydatid disease. This can lead to biliary obstruction, cholecystitis, cholangitis, pancreatitis, and septicemia with high morbidity and mortality (1,2). It is vitally important to keep these complications in mind when abdominal pain, fever, and jaundice develop in patients with hydatid disease. Imaging modalities, especially magnetic resonance cholangiopancreatography (MRCP) play an important role in the diagnosis of these complications (3). Here we describe a rare case of biliary obstruction, cholangitis, and septicemia secondary to hydatid cyst rupture into the common bile duct. We also discuss the typical imaging findings of the patient.

CASE REPORT

A 32-year-old male patient was admitted to the emergency department with a 3-day history of right upper quadrant abdominal pain, fatigue, fever, jaundice, and vomiting. Physical examination revealed abdominal tenderness and scleral icterus. The patient had a normal blood pressure of 120/75 mm Hg, oxygen saturation level of 95% on room air. Axillary temperature was 38.8°C. The patient had no medical history. Laboratory investigations revealed elevated white blood count (16.2 K/uL, reference value 4–10.8 K/uL), and liver enzymes as

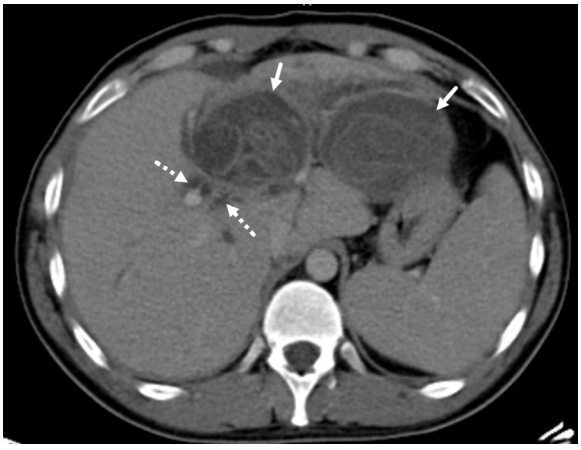

Figure 1. Axial contrast enhanced computed tomography scan of the abdomen with soft-tissue window settings (window width of 350 Hounsfield units (HU) and window level of 50 HU) shows unilocular hepatic cysts with detached laminated membranes compatible with hepatic hydatid cysts on segment II and IV (white arrows). Intrahepatic biliary duct dilation also seen (white dashed arrows).

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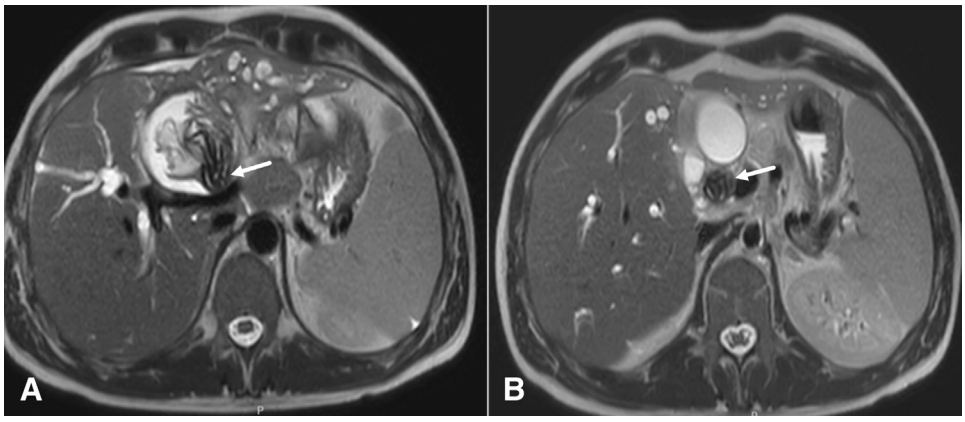

Figure 2. Consecutive axial T2-weighted fast spin-echo magnetic resonance images (A, B) show cyst rupture into the common hepatic duct and hydatid cyst membranes in the common bile duct (white arrows).

follows: γ-glutamyl transferase 102 U/L (reference value 11–72 U/L), alanine transaminase 43 IU/L (reference value < 40 IU/L), aspartate transaminase 51 IU/L (reference value < 38 IU/L), total bilirubin 19.9 mg/dL (reference value < 1.2 mg/dL), and C-reactive protein level 12.9 U/mL (reference value 0–0.5 mg/dL). Increased prothrombin time (56.2 s, reference value 9.6–14.2 s), activated partial thromboplastin time (46.9 s, reference value, 20–38 s), and international normalized ratio (4.47, reference value 0.85–1.2) were observed. The patient's other laboratory values were within normal limits.

Given the laboratory results and patient complaints, abdominal ultrasonography (US) was obtained. Abdominal US showed intrahepatic and extrahepatic biliary duct dilation, cholecystolithiasis, gallbladder wall thickening compatible with cholecystitis and large unilocular hepatic cysts with detached laminated membranes on segment II and IV. For further evaluation, i.v. contrast-enhanced computed tomography (CT) was performed. CT of the abdomen showed unilocular hepatic cysts with detached laminated membranes compatible with hepatic hydatid cysts on segment II and IV. Intrahepatic and extrahepatic biliary duct dilation was also observed (Figure 1). MRCP was obtained to investigate the cause of bile duct enlargement (in terms of compression or cyst rupture). MRCP showed cyst rupture into the common hepatic duct. Hydatid cyst membranes were also observed in the common bile duct, causing the obstruction (Figures 2 and 3).

The patient was diagnosed with obstructive icterus due to hydatid cyst rupture into the biliary tree and cholangitis. The patient's blood culture grew *Escherichia coli*. Treatment was started with meropenem and albendazole. Endoscopic retrograde cholangiopancreatography (ERCP)

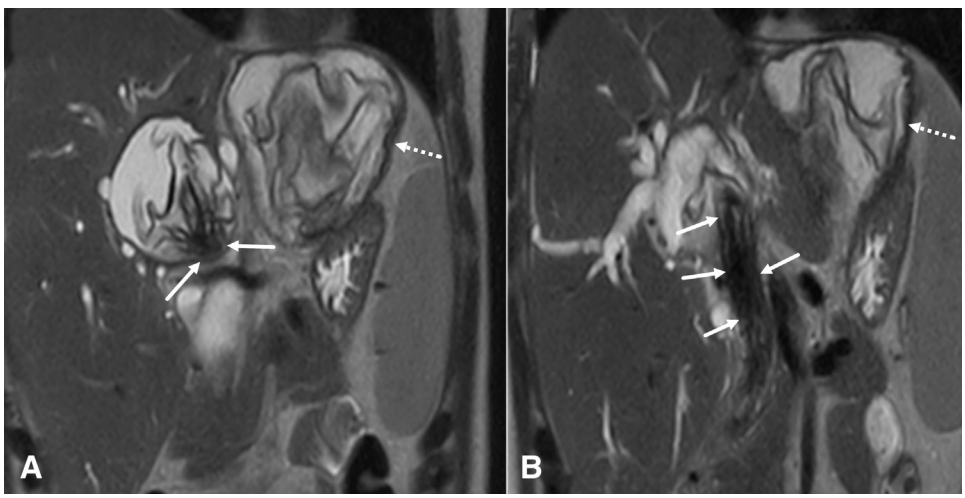

Figure 3. Consecutive coronal T2-weighted fast spin-echo magnetic resonance images (A, B) show cyst rupture into the common hepatic duct and hydatid cyst membranes in the common bile duct (white arrows). Another hydatid cyst also seen on segment II (white dashed arrows).

and stent placement were performed in the common bile duct. During ERCP, it was found that the common bile duct was filled with hydatid membranes and daughter cysts. Clinical and laboratory findings of the patient were improved in his third week of hospitalization and the patient was referred to surgery.

DISCUSSION

Hydatid cyst rupture into the common bile duct is a rare but life-threatening complication of hydatid disease. The presentation of intrabiliary rupture of the hydatid cyst can range from asymptomatic to obstructive icterus, cholecystitis, cholangitis, pancreatitis, or septicemia (1,2). Clinical findings depend on the size of cystobiliary communication and the incidence of complications is increased in cases with large size of cystobiliary communication, as in our case (1). On MRCP, it was found that the common bile duct was filled with hydatid membranes and daughter cysts. In these patients, deterioration of liver function tests and coagulation parameters may be seen, as in our case (3). In conclusion, intrabiliary rupture of the hydatid cyst is a rare but serious complication of hydatid disease and it should be considered as a differential diagnosis in patients with hydatid disease who were admitted with complaints of abdominal pain, fever, and jaundice. Early detection of complications and aggressive treatment is vital.

REFERENCES

1. Dolay K, Akbulut S. Role of endoscopic retrograde cholangiopancreatography in the management of hepatic hydatid disease. World J Gastroenterol 2014;20:15253–61.
2. Sıkar HE, Kaptanoğlu L, Kement M. An unusual appearance of complicated hydatid cyst: necrotizing pancreatitis. Ulus Travma Acil Cerrahi Derg 2017;23:81–3.
3. Erden A, Ormeci N, Fitoz S, Erden I, Tanju S, Genç Y. Intrabiliary rupture of hepatic hydatid cysts: diagnostic accuracy of MR cholangiopancreatography. AJR Am J Roentgenol 2007;189:W84–9.