Gastroenterology and Hepatology From Bed to Bench.
2023 **RIGLD**, Research Institute for Gastroenterology and Liver Diseases

PHOTO QUIZ

p-ISSN: 2008-2258 e-ISSN: 2008-4234

An unusual shape of ampulla secondary to impaction of hydatid membrane

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(Please cite as: **Sadeghi A, Radgoodarzi N, Aminzade D. An unusual shape of ampulla secondary to impaction of hydatid membrane. Gastroenterol Hepatol Bed Bench 2023;16(3):360-363. https://doi.org/10.22037/ghfbb.v16i2.2644).**

Question

The patient was a 37-year-old Afghan man who was referred to our hospital with a chief complaint of RUQ pain aggravated with feeding. Two days prior to admission, the patient developed constant RUQ pain, positional, radiation to back, chills, jaundice, and postprandial vomiting.

In physical examination, the patient was hemodynamically stable (BP 110/70 mm Hg), afebrile (Axillary temperature was 36.3 °C.), generalized jaundice was detected, and the abdomen was soft in touch with RUQ tenderness with negative Murphy's sign.

In lab data, leukocytosis with neutrophilia (WBC:11000 cells/mm^3, PMN: 90 %, lymph: 5%, MIX: 5%), Hb:12.3 g/dL, MCV:88.8 fL/cell, RBC:4.18 cells/mm^3, PLT:514000 cells/mm^3, abnormal Liver function tests (AST: 113 U/L, ALT:207 U/L, ALP:533 U/L, Bili T:10 mg/dL, Bili D:6.5 mg/dL, LDH:445 U/L), Amylase: 738, lipase: 596, CRP:26, ESR:35, BUN: 18, Cr:1 mg/dL, Alb: 3.1 g/dL, Na:140 mEq/L, K: 3.8 mEq/L, INR: 1 were detected (Table 1).

In the plane, an x-ray was seen air-fluid level in RUQ (Figure 1).

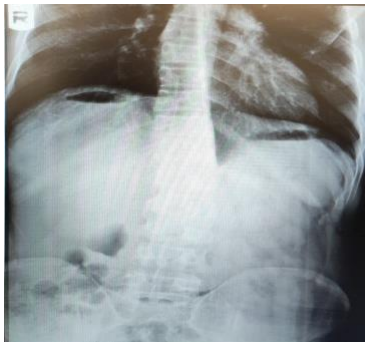

Figure 1. An x-ray with air-fluid level in RUQ

Table 1. Laboratory data

Blood test	Result	Normal value
WBC	11000	4.5–11.0 × 10^3 cells/mm^3
Polymorphonuclear leukocytes(PMN)	90%	40-60%
lymph	5%	20-40%
MIX	5%	?
HB	12.3	14–18 g/dL
MCV	88.8	80–100 fL/cell
RBC	4.18	4.5–5.9 × 106 cells/mm^3
PLT	514000	150,000–350,000 cells/mm^3
AST	113	10–30 U/L
ALT	207	10–40 U/L
ALP	533	30–120 IU/L
Bilirubin, total	10	0.3–1.2 mg/dL
Bilirubin, direct	6.5	0.1–0.3 mg/dL
LDH	445	100–200 U/L
Amylase	738	27–131 U/L
lipase	596	31–186 U/L
CRP	26	0.08–3.1 mg/L
ESR	35	1-13 mm/hr
BUN	18	6-24 mg/dL
Creatinine, serum (SCr)	1	0.6–1.2 mg/dL
Alb	3.1	3.5–5 g/dL
Na	140	136–142 mEq/L
K	3.8	3.5–5.0 mEq/L
INR	1	0.9–1.1

Received: 01 October 2022 *Accepted*: 18 December 2022
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Multiple echogenic foci of air were seen in both the centre and periphery of the right and left liver lobes on transabdominal sonography, along with a liver of normal size. Central and peripheral bile ducts were dilated, and contained air focus, CBD was 17 mm that contain echogenic focuses and pneumobilia. The gall bladder was distended with sludge, and echogenic focus without posterior shadow.

A spiral abdominopelvic CT scan with IV, and oral contrast was done, and reported a ruptured abscess about 90*62*41 mm with patchy calcification around the abscess in liver, its communication to CBD, and RHD was seen. Pneumobilia was observed in RHD and CBD (Figure 2).

The ampulla was visible during a duodenoscopy and bulged out. The ampulla was revealed to be releasing a white membrane. A significant quantity of pus and big membranes from the hydatid cyst emerged during needle knife fistulotomy (Figure 3). Regarding the cholangitis, the patient was treated with antibiotics (Ceftriaxone 1 g IV twice daily, and metronidazole 500 mg IV TDS) for 7 days. The patient was discharged from the hospital in good condition. Albendazole 400 mg BID was also prescribed for eight weeks.

What is your diagnosis?

What is the next step?

Discussion

Hydatid disease is a health problem in endemic areas. 75–85% of hydatid cysts are localized in the liver of patients (1). Some cysts may grow at an average rate of 1–20 mm per year, and these patients survive with no evident changes for a long time; other cysts can be calcified, and completely disappeared (2). An enlarging cyst may compress, and cause atrophy and fibrosis of the liver (3). The main complications of hydatid disease are an infection of the cyst, and rupture into either the peritoneum, biliary tree, or other organs (4). Hydatid cysts of the liver put strain on the parenchyma around them, and because of the increased pressure within the cyst—which is often up to 80 cm H_2O—the cysts ultimately leak into tiny bile channels or perforate big ones in around one-fourth of the cases. Any component of the biliary system may rupture due to a liver hydatid, although the connection with the hepatic bile ducts is the most typical (5). Intra biliary rupture occurs with an incidence between 5% and 25% Rupture between a

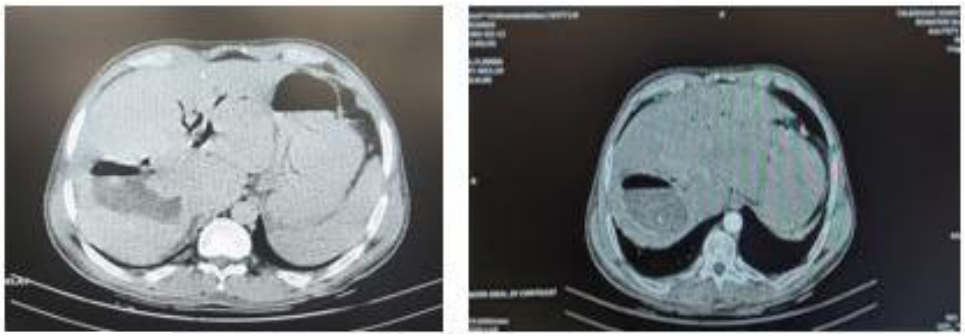

Figure 2. Liver hydatid cyst

Figure 3. ERCP imaging

hepatic hydatid cyst, and the gallbladder is rare. The communicating intra biliary rupture may occur with the occult (10-37%) or frank (3-17%) (6). Occult rupture is usually silent; but in frank rupture, daughter vesicle, and fragmented membranes cause obstruction, cholangitis cholecystitis, pancreatitis, peritonitis, or septicemia (7-9). Obstructive jaundice by hydatid cyst in the extrahepatic ducts can be in terms of the rupture of liver hydatid cyst in the biliary tract or primary hydatid cyst in the biliary tract. The pathogenesis of the unusual locations of hydatid cysts support the hypothesis that besides portal circulation, the echinococcus embryos can spread via other routes, such as the lymphatic system, which further extend to involve the luminal mucosa, and the biliary tract, although the embryos could invade the biliary lumen directly (10). Hepatic hydatid disease after a long asymptomatic course becomes symptomatic (11).

Imaging tools, such as ultrasonography (U/S), abdominal computed tomography (CT), magnetic resonance cholangiopancreatography (MRCP), and endoscopic retrograde cholangiopancreatography (ERCP), are useful devices to diagnose the disease. U/S and CT scans are the first diagnostic tools of choice which can be applied under all conditions (12, 13).

As a symptom of cholangitis, ultrasonography may show convoluted hydatid cysts, connectivity of the cyst with the duct, dilated biliary tree, and thicker and double-layered bile duct walls. A daughter cyst may be seen on an MRCP (14). ERCP provides more comprehensive information. It can show impacted daughter cyst in the ampulla of Vater, displacement, distortion of intrahepatic duct, differentiated cholestasis in terms of ruptured cyst from the other causes. ERCP can help establish definitive detection and treatment with sphincterotomy in the patients affected by intra-biliary rupture of a cyst (1).

Over the past decades, surgical management was one of the best treatment methods for liver hydatid disease. However, by the advancements in chemotherapy and percutaneous therapy techniques, the surgery is reserved mainly for the complicated hydatid cysts, ERCP was successful to address other complications of biliary hydatidosis, such as clearing the biliary tree, closing fistulas, and biliary leaks (15, 16). Patients with obstructive jaundice and cysts often need a sphincterotomy, after which membranes may be removed using a basket or an occlusion balloon (17, 18). Drugs of benzimidazole family (albendazole or mebendazole) are used to treat hydatidosis, but albendazole is the best pharmacological option (19, 20).

Conflict of interests

The authors declare that they have no conflict of interest.

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