

Case Report

Hydatid Cyst in Gallbladder-Associated Ectopic Liver

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Keywords

- Accessory hepatic lobe
- Ectopic liver
- Hydatid liver disease

Abstract

Objective: The combination of hydatid disease occurring in the ectopic liver (EL) is extremely rare. Herewith, we report clinical case of a hydatid cyst in gallbladder-associated EL.

Material and methods: A 49-year old male rectal cancer patient with liver metastasis in Sg 2 and Sg 3 and a hydatid cyst in Sg 4 was reported. Intra operatively, a smooth fragment of reddish-brown tissue of EL attached to gallbladder anterior surface was observed.

Results: A small hydatid cyst in EL periphery was detected and resected en-bloc with the gallbladder. In our clinical case, the find of hydatid cyst in ectopic liver is accidental. We observed a small hydatid cyst locates in ectopic liver attached to the liver.

Conclusion: Surgery remains the gold standard treatment for hydatid liver disease. This is the first clinical case about EL and a hydatid cyst we report.

INTRODUCTION

Ectopic liver (EL) tissue results from failure of embryological liver development and occurs in 0.24-0.47% of laparotomy or laparoscopy findings [1]. The accessory hepatic tissue is, usually, asymptomatic. It is attached to the liver by bridge of hepatic tissue, a mesentery or by a stalk, as an EL in which the hepatic tissue is sited within another organ, or as an accessory liver as a separate organ neither attached to the liver nor embedded in another organ [2]. Hydatid disease (HD) in people is mainly caused by infection with the larval stage of the dog tapeworm *Echinococcus granulosus*. It is an important pathogenic, zoonotic and parasitic infection of humans, following the ingestion of tapeworm eggs excreted in the faeces of infected dogs. HD is a major endemic health problem in certain areas of the world [3].

The combination of HD occurring in the EL is extremely rare. Herewith, we report a clinical case of a hydatid cyst in gallbladder-associated ectopic liver.

CASE PRESENTATION

A 49-year old male rectal cancer patient with liver metastasis in Sg 2 and Sg 3 and a hydatid cyst in Sg 4 was reported. The man working as an engineer and has no direct access to the dogs. Intra operatively, a smooth fragment of reddish-brown tissue of EL attached to gallbladder anterior surface was observed. A small hydatid cyst in EL periphery was detected (Figures 1,2) and removed en-bloc with the gallbladder. EL measured 35 mm×15 mm×10 mm and was attached to gallbladder visceral peritoneum of type "b" according to Collan et al. [4].

DISCUSSION

As a whole, various congenital hepatic anomalies occur in 19.3% of 1,802 laparoscopies [5]. In the same series, the incidence of ectopic and accessory liver lobes is 0.7% [5] while in other series it is 0.56% [6,7]. Most cases of ectopic an accessory liver lobes are not detected since they do not cause any symptoms and can be found incidentally [8]. However, they can give rise to various clinical symptoms like recurrent abdominal pain, impaired liver function or torsion if situated in the abdomen [9].

A symptomatic accessory liver lobe attached by a triangular mesentery to the gastrohepatic ligament has been reported [10]. The accessory liver lobe occurs after torsion of its vascular pedicle

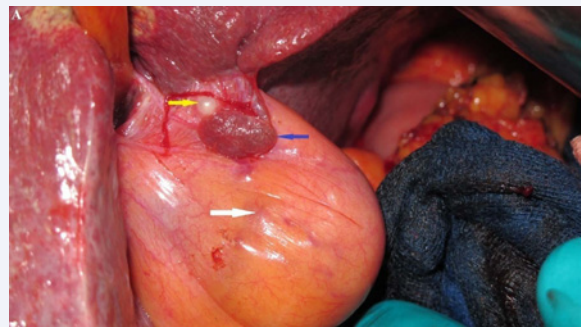


Figure 1 A small cyst (yellow arrow) in reddish-brown tissue of ectopic liver (blue arrow) attached to gallbladder anterior surface (white arrow).

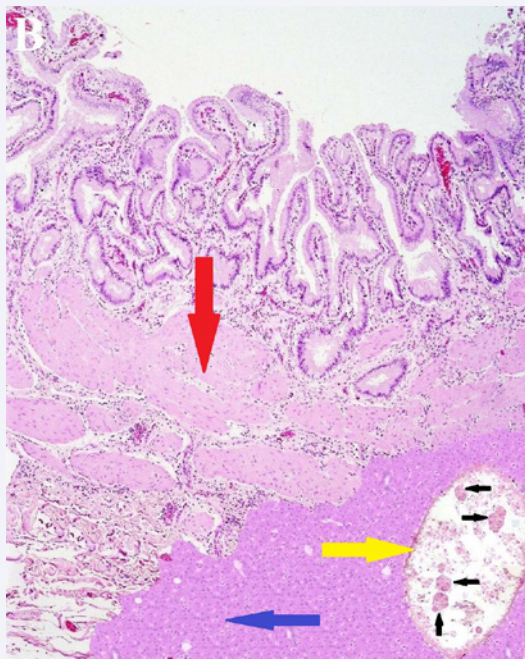


Figure 2 The microphotograph (staining with HE, magnification x 20) proved a hydatid cyst (yellow arrow) containing protoscolices (black arrows) developing in gallbladder (red arrow)-associated ectopic liver (blue arrow).

provoking the acute surgical abdomen, in case of metastasis in its parenchyma, or when located in the thoracic cavity [11,12]. An accessory liver is adjacent and attached to the liver by its own mesentery, while an EL is completely detached from the normal hepatic parenchyma [13]. They occur at different places in the body, most commonly, in liver undersurface, gastro hepatic ligament, gallbladder, near the umbilicus, adrenal gland [14] and pancreas, although left thoracic cavity [12] and other distant sites [15] can also be involved. An artery, vein, portal vein, and bile duct are necessary for its viability. Different variants of an abnormally positioned liver (i.e., ectopic liver) prompted its classification into four types: type I, large accessory liver lobe >30 g, type II, small accessory liver lobe <30 g, type III, EL attached to the gallbladder or intra-abdominal ligaments, type IV, microscopic EL in the gallbladder wall [4,13]. Types I and II have the potential lobe connected to the liver via a single blood supply within a pedunculated stalk. According to Massaro et al. [16], there are big accessory hepatic lobes (>30 g, type A), small accessory hepatic lobes (<30 g, Type B), ectopic lobes with no liver connection and microscopic accessory lobes in the gallbladder wall. Several theories have been proposed to explain occurrence of EL at sites other than the gall bladder, such as development of an accessory hepatic lobe that has lost its connection to the main liver, displacement or migration of part of the pars hepatica to other sites, dorsal budding of hepatic tissue before closing of the pleuroperitoneal canals, trapping of hepatocyte-destined mesenchyme in different areas, or entrapment of nests of cells in the region of the foregut following closure of the diaphragm [17].

HD remains a continuous public health problem in endemic countries. The liver is the most common site for HD (75% of

cases), followed by the lungs (15%), the spleen (5%), and other organs (5%) [18]. Liver hydatidosis can cause dissemination or anaphylaxis after a cyst ruptures into the peritoneum or biliary tract. Infection of the cyst can facilitate the development of liver abscesses and mechanic local complications, such as mass effect on bile ducts and vessels that can induce cholestasis, portal hypertension, and Budd-Chiari syndrome [19]. Treatment of hydatid liver cyst has to be considered mandatory in symptomatic cysts and recommended in viable cysts because of the risk of severe complications [20]. Surgery remains the gold standard treatment for hydatid liver disease. The aim of surgical intervention is to inactivate the parasite, to evacuate the cyst along with resection of the germinal layer, to prevent peritoneal spillage of scolices and to obliterate the residual cavity. It can be performed successfully in up to 90% of patients if a cyst does not have a risky localization [21]. However, surgery may be impractical in patients with multiple cysts localized in several organs and if surgical facilities are inadequate. The introduction of chemotherapy and of the PAIR technique (puncture - aspiration - injection - respiration) offers an alternative treatment, especially in inoperable patients and for cases with a high surgical risk. Cysts with homogeneously calcified cyst walls need, probably, no surgery but only a 'wait and observe' approach [22]. The choice of an optimal treatment should be carefully assessed in each case.

In our clinical case the find of hydatid cyst in EL is accidental. We observed a small hydatid cyst locates in EL type "b" [4], type "III" [13], or type "B" [16]. EL is usually random clinical finding diagnosed during surgery or autopsy. Patients are presenting with non-specific complaints, any deviations from laboratory parameters, as in this study. Diagnosis of EL is commonly verified by serological tests, CT scans, MR tomography, or ultrasound [23]. Surgery combined with medical treatment by albendazole is effective in the eradication of hepatic HD and in the prevention of local recurrences [24].

This is the first clinical case about EL and a hydatid cyst located in it being reported.

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