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Heterotopic hepatic tissue on gallbladder: A rare incidental finding

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Abstract

Introduction: Heterotopic Hepatic Tissue (HHT) is an uncommon medical condition that occurs due to failure of embryological liver development. It can be encountered anywhere in the body and mainly on the gallbladder. HHT are often clinically silent, however they can pose a risk of complications such as torsion, malignant transformation and compression effect over the adjacent structures. We describe the case of hepatic choristoma that was discovered incidentally during laparoscopic cholecystectomy.

Presentation of case: A 38-year-old male patient otherwise healthy, presented with symptomatic gallbladder mural polyps. During procedure, a small lesion resembling liver tissue was noted attached to the gallbladder wall and both were resected successfully. Histopathologic examination revealed benign ectopic liver tissue.

Discussion and conclusion: Hepatic choristomas are rare finding, typically detected during abdominal surgeries. Familiarity with this entity and its diverse presentations and potential complications is essential for improving patient outcomes. Once identified, surgical treatment should be considered as it may carry a risk of malignant transformation.

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Keywords: Choristoma; Heterotopic Hepatic Tissue (HHT); Ectopic liver.

Introduction

Heterotopic Hepatic Tissue (HHT) is an uncommon developmental anomaly in which hepatic tissue is detected outside the liver [1]. Gallbladder is most common location [2], however can also be found in gastrohepatic and umbilical ligaments, omentum, and stomach. Extremely rare cases of ectopic liver tissue were also reported in the pleural cavity, mediastinum, lungs and heart [3].

Choristomas with small dimensions are usually asymptomatic and thus discovered incidentally during surgery. They can exhibit variable and unpredictable growth patterns with potential complications [1]. We describe a case of HHT encountered and managed during laparoscopic cholecystectomy.

Case presentation

In our manuscript, we report the case of 38-year-old man previously heathy, was referred to our hepatobiliary outpatient clinic for symptomatic gallbladder polyps. History goes back to one month prior to presentation where he started to experience typical biliary colic (right upper quadrant associated with nausea and vomiting). Physical examination revealed normal

vital signs, Mild RUQ tenderness with no gaurding. Laboratory investigations, liver enzymes, and tumor markers were all unremarkable except for elevated lipid profile.

Ultrasound abdomen, demonstrated numerous mural polyps with no signs of cholecystitis, grade one fatty liver (Figure 1). Accordingly, patient was scheduled for an elective laparoscopic cholecystectomy. During procedure, a 6 x 5 mm heterotopic hepatic tissue was identified lying over the GB on the medial aspect of the fundus close to segment 4b (Figure 2). Gallbladder along with the HHT were resected and extracted in an endobag. Specimen was checked and the HHT was visualized attached with the GB serosa with a dense fiber (Figure 3). Histopathologic examination was suggestive of benign ectopic liver tissue and gallbladder cholesterolosis. Hospital stay was uneventful, patient was discharged on postoperative day one on low fat diet.

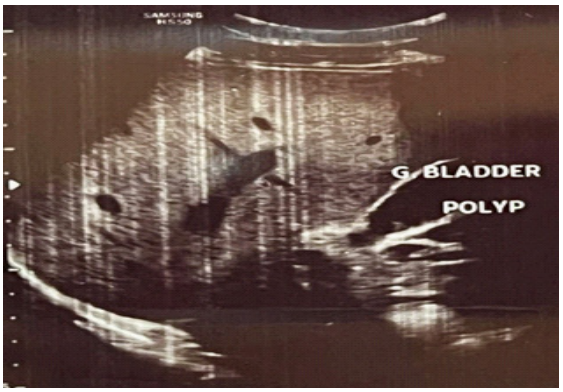

Figure 1: Ultrasound view demonstrating GB Polyps.

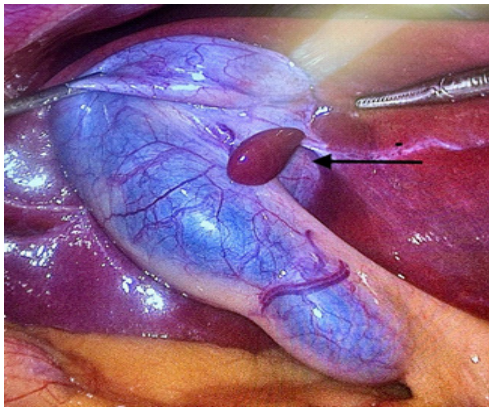

Figure 2: Laparoscopic view during cholecystectomy showing HHT on the gallbladder.

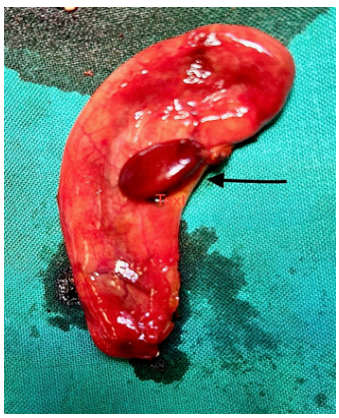

Figure 3: Gross view revealing solitary separate HHT attached to gallbladder.

Discussion

Heterotopic hepatic tissue is a rare developmental anomaly. It has been classified into four main types: 1- Ectopic tissues with no connection to the liver; 2- Microscopic ectopic liver located within the gallbladder wall; 3- Large accessory liver lobe attached to the main liver by a stalk; and 4- Small accessory liver lobe attached to the main liver [1]. Our patient had type one, a separate hepatic choristoma over the gallbladder with no connection with the liver.

Hepar succenturiatum attached to the gallbladder is the most common location of ectopic tissue, its incidence is 0.05% and most of them are diagnosed intraoperatively [2]. Another study of 5,500 autopsies showed that only 0.05% had HHT and just three cases were attached to the gallbladder wall [4]. Additionally, a review of 1,060 laparoscopic procedures found EL attached to the gallbladder wall in three patients (0.28%) [4]. Although the gallbladder is the most common site for choristoma, it can also be found in both the intra-abdominal and intra-thoracic cavities. Furthermore, it has been discovered in locations such as the spleen, umbilicus, vena cava, heart, and lungs [5,6].

According to the literature, there are many theories explaining the development of ectopic liver in various locations such as regression of the original connection to liver, migration of a portion of the cranial part of the liver bud, dorsal budding of hepatic tissue before the pleuroperitoneal canals closure, trapping of mesenchymal cells destined to become hepatocytes in different regions, and entrapment of cell nests in the foregut region after the diaphragm or umbilical ring closures [7].

Heterotopic Hepatic Tissues (HHT) usually have its own vascular supply that does not originate from the hepatic artery. However, it lacks its own portal vein system and ductal system connected to the biliary tree [8]. Arakawa et al. reported cases of ectopic liver that receive blood supply from branches of the hepatic artery [9].

HHT is usually asymptomatic. However, it can present with abdominal pain due to torsion or compression of adjacent organs. It can also cause intraperitoneal bleeding due to rupture, and obstructions in the esophagus, portal vein, neonatal gastric outlet, and pylorus [4,6]. Hepatocellular Carcinoma (HCC) reported in about 46% of EL encountered outside the liver. However, in EL connected to the gallbladder, the occurrence of HCC is lower, at only 2.4% [5,6]. In our case tumor markers were unremarkable and histopathologic findings were negative for malignancy.

Preoperative diagnosis can be challenging due to its small size and the rarity of HHT, making it difficult for radiologists to detect it preoperatively. As a result, it is most commonly diagnosed incidentally during exploration. Furthermore, as in this case presented here, it is sometimes challenging to distinguish HHT from other causes of gallbladder lesions, such as adenomas, polyps, and carcinoma, preoperatively [9-11]. According to the literature review and the increased risk of malignant transformation, we advise to excise any choristoma if it does not augment the complexity of surgery and to always extract it in the bag to avoid the risk of dissemination. Postoperative course was uneventful and our patient was discharged one day after operation.

Conclusion

HHT is an uncommon developmental anomaly that is usually

discovered incidentally during surgery. This rare entity imposes some clinical challenges due to its unpredictable nature. Therefore, we recommend to completely resect it when encountered, as it also has a potential link to carcinogenesis and other complications.

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