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ECTOPIC LIVER TISSUE ON THE GALLBLADDER WALL; A CASE REPORT AND LITERATURE REVIEW

Ramazan Topcu Hitit University, School of Medicine, Erol Olçok Training and Research Hospital, Department of General Surgery

Murathan Erkent Hitit University, School of Medicine, Erol Olçok Training and Research Hospital, Department of General Surgery

Murat Kendirci Hitit University, School of Medicine, Erol Olçok Training and Research Hospital, Department of General Surgery

İbrahim Tayfun Şahiner* Hitit University, School of Medicine, Erol Olçok Training and Research Hospital, Department of General Surgery *Corresponding Author

ABSTRACT

Ectopic or heterotrophic liver refers liver tissue that is located outside the normal liver location. Although there is no strong information about long-term follow-up results of the ectopic liver, surgical resection is recommended because of the high likelihood of carcinogenesis (hepatocellular carcinoma). However, it has been reported that this possibility is lower in the gallbladder localization. Since it is rare, heterotopy may not be considered during diagnosis. However, in abdominal ultrasonography or tomography, the ectopic liver tissue should be considered for focal thickening with the same characteristics as the liver in the gallbladder wall. In this study, two cases of ectopic liver, which were detected incidentally on gallbladder during laparoscopic cholecystectomy and Whipple surgery, were presented.

INTRODUCTION

Ectopic or heterotrophic liver means that liver tissue is located outside the normal liver location, called Chorisitoma. Ectopic liver is a rare developmental anomaly. Because of embryological development; it is observed in many organs, most commonly gallbladder, less frequently umbilical cord, hepatic ligament, stomach, retro peritoneum, and thorax.

Ectopic liver is usually encountered incidentally, during laparoscopic or open abdominal operations and during autopsy [1-3]. Although the ectopic tissue has a similar structure to the liver lobule in the histological examination, it has a significant potential for hepatocellular carcinoma development compared to the liver tissue [4, 5]. In this study, we present two cases of ectopic liver found incidentally on gallbladder during laparoscopic cholecystectomy and Whipple operation.

CASE 1

A 64-year-old woman was admitted to the emergency room with a complaint of intermittent right upper quadrant abdominal pain and indigestion after eating food for two years. Physical examination of the patient, who is with no nausea, no vomiting complaints, except for pain, revealed no sensitivity to the epigastric area, and no defenses and rebounds were detected.

In the laboratory analysis, full blood count and urine analysis results were normal. Liver transaminases (ALT, AST), alkaline phosphatase, total and direct bilirubin levels were found to be within the normal limits. The patient had no co-morbid illness or any continuous drug use.

Abdominal ultrasonography revealed multiple gallstones, the largest of which is 18*6 mm, with no evidence of ectopic liver tissue. The patient was admitted for cholecystectomy. During operation, a 1.5*8*0.6 cm, liver-independent, brown, liver-like nodular structure was seen on the free peritoneal surface of the gallbladder and was excised with cholecystectomy material (Figure 1). Ectopic liver tissue was reported as a result of pathology.

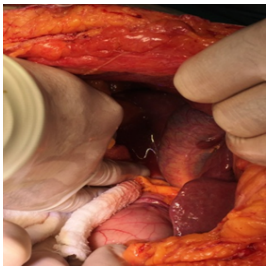

Figure 1: The ectopic liver tissue located in the gallbladder that was noticed during cholecystectomy

CASE 2

A 70-year-old woman admitted to the emergency room with an icterus complaint began one week ago. Physical examination revealed pain in the upper right quadrant. Full blood count was normal. Liver transaminases (ALT, AST), alkalenfosfatase, total and direct bilirubin values were high. Type 2 diabetes mellitus existed in the patient.

The abdominal ultrasonography showed no gallstone or polyps in the gallbladder and no findings of ectopic liver tissue. The patient with a malignant mass in the pancreas detected in the abdomen tomography and magnetic resonance imaging underwent a Whipple operation.

During the operation, on the free peritoneal surface of the gallbladder, a 1, 2*6*8 cm, liver-independent, brown, liver-like mass was seen (Figure 2). It was involved in excision. As a result of pathology, it was reported as an ectopic liver tissue.

Figure 2: The ectopic liver tissue located on the gallbladder discovered during the Whipple operation

DISCUSSION

The ectopic liver tissue is a rare developmental anomaly and is also referred to as heterotrophic liver or chorisitoma. Because of embryological development; it is observed in many organs, most commonly gallbladder, less frequently umbilical cord, hepatic ligament, stomach, retro peritoneum, and thorax [1-3].

Heterotrophic (HT) liver tissue is usually found incidentally in autopsies, laparotomy and laparoscopies [1-3, 6]. Ectopic liver is a rare anomaly. In 3 out of 5500 autopsies, ectopic liver tissue has been reported [2] also reported being encountered at the rate of 0.7% during laparoscopy [7]. Carcinogenesis is more common in heterotrophic liver tissue. Sometimes it can be diagnosed through neoplastic changes or compression findings. The increased carcinogenesis potential of ectopic liver compared to the main liver is due to inhibited vascular nutrition and biliary drainage [7]. Case 1 with a diagnosis of symptomatic cholelithiasis and Case 2 with the diagnosis of pancreatic adenocarcinoma underwent a surgical operation and pathological diagnosis was reported as an ectopic liver tissue.

Some mechanisms for the formation of the ectopic liver have been proposed. One of these mechanisms is that, during the embryological period, the linkage of an accessory liver lobe to the main liver become atrophic or regressed. The other theory is the migration or misplacing of a part of pars hepatica in the liver bud during the embryological period or, before the closure of the pleuroperitoneal duct, the dorsal bud of the liver tissue.

To another theory, it results from that mesenchymal cells which transform into hepatocytes are located in different regions. After the closure of the diaphragm or umbilical ring, the fact that cell clusters remain in the foregut region is another reason for the transforming into heterotrophic liver tissue [3, 8, 9].

Findings of pressure to adjacent organs (esophagus, portal vein and pylorus) by ectopic liver have been reported in the literature. In addition, the torsion of ectopic tissue may cause recurrent abdominal pain, which may be considered in the differential diagnosis [6].

Since ectopic liver tissue is small in size and rare, detection by preoperative diagnostic methods is pretty harder. It is almost impossible today to preoperatively distinguish ectopic liver tissue in the gallbladder from other gallbladder lesions such as cholesterol polyp, adenoma and carcinoma. However, in abdominal ultrasonography or tomography, ectopic liver tissue should be considered for focal thickening of the gallbladder wall with the same characteristics as the liver [9].

Histopathologically precise diagnosis can be made with biopsy accompanied by ultrasonography. Ectopic liver tissue may have mesentery harboring arteries and veins. Depending on the localization, it might have drainage to the biliary system or another organ. In most cases, the ectopic tissue does not have a drainage system. The arterial haemoragia of ectopic liver tissue is usually provided by an autonomous artery that is not branched from the hepatic artery. It also lacks its own portal vein system and ductal system associated with the biliary tree [10].

The ectopic liver has been reported to be sometimes associated with biliary atresia, the absence of caudal liver lobe, omphalocele, biliary tract cyst, cardiac anomaly, but these anomalies do not associate with the ectopic liver presence in the gallbladder [11].

Although there is no strong evidence about long-term follow-up results of the ectopic liver, surgical resection is recommended because of the high probability of carcinogenesis (hepatocellular carcinoma). However, it has been reported that this probability is lower in the localization of the gallbladder [4]. Therefore, if there is a pathological state in the gallbladder, excision of ectopic liver tissue as well as gallbladder is recommended.

CONCLUSIONS

As a result; heterotopia may not be considered during diagnosis since it is a rare situation. However, in abdominal ultrasonography or tomography, the ectopic liver tissue should be considered for focal thickening with the same characteristics as the liver in the gallbladder wall.

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