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Original Research Article

Unusual finding during laparoscopic cholecystectomy: liver choristoma in the gallbladder wall

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ABSTRACT

Hepatic choristomas or ectopic livers are rare developmental anomalies and are usually located in the abdomen, retroperitoneum and thorax. A 34-year-old male patient underwent a scheduled laparoscopic cholecystectomy, the findings during surgery were a gallbladder with multiple lithiasis inside, with a smooth fragment of reddish-brown tissue attached to the anterolateral surface of the gallbladder. The patient evolved satisfactorily and was discharged 24 hours after surgery. Objective was to describe a clinical case of hepatic choristoma adhered to the anterolateral wall of the gallbladder, as well as its etiology, clinical picture and therapeutic conduct. Hepatic choristoma in the gallbladder is due to an anomaly in the embryologic development of the liver, due to its potential for malignant degeneration, it should be resected as soon as it is detected, being laparoscopic cholecystectomy an adequate approach.

Keywords: Hepatic choristoma, Heterotopia, Ectopia, Gallbladder

INTRODUCTION

The term hepatic choristoma refers to a neoformation with normal tissue histology, located outside its usual location.[1] First described by Morgagni in 1767 and Corsy in 1922. With an incidence of 0.24-0.47%, however it is not known exactly.[2] They are considered extremely rare anomalies in embryological development, being found in the retroperitoneum, thorax, abdomen, being reported anecdotally, adhered to the wall of the gallbladder, gastrohepatic ligament, pancreas, spleen, navel, adrenal glands, diaphragm and portal vein.[3] Unusually, the liver may have accessory lobes connected by a tongue of normal liver tissue; however, there are cases of heterotopic liver tissue without vascular, biliary or parenchymal connections, which corresponds to a choristoma.[4]

Theories to explain the development of an ectopic liver: Development of an accessory lobe of the liver with atrophy or regression of the original connection to the main liver. Migration or displacement of a portion of the pars hepatis to other sites, entrapment of a nidus of cells in the foregut region after closure of the diaphragm or umbilical ring, and entrapment of mesenchyme intended for hepatocytes in several areas, thereby sprouting liver tissue before closure of the pleuroperitoneal canal.[5] Anatomical characteristics: three patterns of irrigation: Artery arising from the cystic artery. Vascular pedicle arising from the hepatic parenchymal substance. Vascular structures embedded in a mesentery extending from the hepatic site to the ectopic liver tissue. Three types of biliary drainage: Duct from the accessory hepatic lobe drains into an intrahepatic bile duct of the native liver. It drains into an extrahepatic bile duct of the native liver.

The accessory lobe and the liver drain into an extrahepatic duct.[2]

It is associated with anomalies such as biliary atresia, caudate lobe agenesis, omphalocele, bile duct cyst, cardiac anomalies, however, these anomalies were not reported when the heterotopic tissue was attached to the gallbladder surface.[6] Histologically it resembles normal liver, normal portal structure, regular lobules and central veins, although it has complete functional architecture it has metabolic disabilities and is more prone to carcinogenesis. Like the main liver tissue it may undergo fatty changes, hemosiderosis, cholestasis, cirrhosis, hepatitis or malignant degeneration to hepatocellular carcinoma.[7] Ectopic liver tissue in the gallbladder is less susceptible to the development of hepatocellular carcinoma than that located outside the gallbladder, one theory being that ectopic liver tissue attached to the gallbladder is an anomaly that occurs later during the development of the biliary bud and is therefore a well-differentiated tissue.[8]

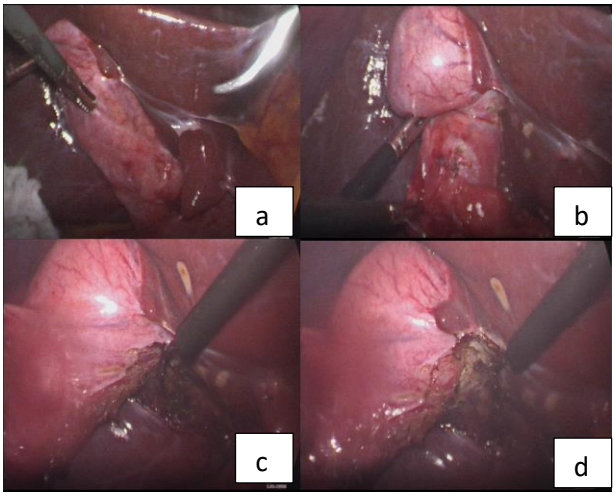

Figure 1: (a) anterior vision of the gall bladder b) traction to expose the choristoma c) dissection of the posterior wall of the gall bladder d) exposition of the choristoma.

Like the maternal liver, ectopic liver tissue is exposed to carcinogens during its embryology, including not only viral infections, but also chemical carcinogens that cannot be completely excreted due to the underdeveloped blood vessels of the ectopic liver tissue's excretory system, which increases the risk of carcinogenesis.[9] It is usually asymptomatic and is discovered incidentally during surgery, laparotomy, laparoscopy or autopsy, however, there is a small percentage of approximately 2% in which the diagnosis can be made through imaging studies. It rarely causes symptoms and is associated with complications. Complications such as torsion, malignant transformation, compression of adjacent organs and intraperitoneal bleeding.[10] Patients with ectopic liver are usually asymptomatic. However, these patients may have transient disturbances or abdominal pain due to their complications. Which may obstruct the portal vein or pylorus. This pain should be differentiated from cholecystitis, bile duct stones and other diseases.[11] The diagnosis of hepatic ectopia is usually made by surgical findings, as in this case in the performance of laparoscopic cholecystectomy.

CASE REPORT

A 34-year-old male patient was admitted for elective laparoscopic cholecystectomy due to chronic calculous cholecystitis. With a history of 2 previous episodes, managed with medical treatment, with remission. Ultrasound of the liver and biliary tract without thickening of the gallbladder wall and presence of lithiasis inside the gallbladder. Laparoscopic cholecystectomy was performed. As a finding: smooth reddish-brown tissue fragment, attached to the anterolateral surface of the gallbladder, 2×1×1 cm tumor with the appearance of liver tissue (Figure 1). The gallbladder was removed with the usual laparoscopic technique, preserving the tumor in the gallbladder wall. The evolution was satisfactory and the patient was discharged after 24 hours. The histopathological report: gallbladder with subserosal mature liver tissue, consistent with heterotopic liver in the gallbladder wall (choristoma).

DISCUSSION

Of the published cases, the preoperative diagnosis has only been established on 2 occasions by abdominal ultrasound in one case and abdominal computed tomography in the other; in neither case was the image observed on ultrasound or CT established as liver tissue but as a nonspecific tumor.[11] In the case of our patient the ultrasound did not identify any tumor or other abnormality in the gallbladder wall and the hepatic choristoma found in the gallbladder wall was an incidental finding as is usually reported in the literature. When it is located in the gallbladder, it has most frequently been found on the external serosal surface; other less frequent locations are intramuscular and subserosal, as in our case reported.[12] Histopathological findings in cases of hepatic heterotopia include normal parenchyma, fatty infiltration, cirrhosis and hepatocarcinoma, it has been reported that there are usually the same characteristics or histopathological changes in the ectopic liver and the native liver as the coexistence of cirrhosis, and it has also been reported the greater susceptibility of heterotopic tissue to carcinogenesis due to metabolic alterations associated with the lack of normal venous and biliary drainage.[13] As a consequence of its clinical significance, the recommendation of surgical treatment has been recently established due to the high risk of hepatocarcinoma development reported in different clinical series.[14]

Surgical resection is recommended as soon as it is diagnosed, and even if histopathological examination

confirms a malignant neoplasm, a second surgical intervention is recommended to widen the margins of resection with regional lymphadenectomy.[15] Even though our patient's hepatic choristoma is an unexpected finding, it is important to highlight the pathologic implications of this tissue and the potential for malignancy associated with it.

CONCLUSION

The hepatic choristoma in the gallbladder wall is due to an anomaly of the embryological development of the liver that is generally asymptomatic, considered an uncommon finding, which is diagnosed incidentally at the time of laparoscopy, however, it is important to know the guideline to follow, because of its potential malignant degeneration, with the need to be resected in its entirety.

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REFERENCES

1. Beltran MA, Barria C, Pujado B, Barrera R, Mendez P, Pozo C. Hepatic heterototopic tissue on the gallbladder wall: an incidental finding with pathological potential. J Gastrointest Liver Dis. 2007;16:347-9.
2. Akbulut S, Demyati K, Ciftci F, Koc C, Tuncer A, Sahin E, et al. Ectopic liver tissue (choristoma) on the gallbladder: A comprehensive literature review. World J Gastrointest Surg. 2020;12(12):534-48.
3. Termos S, Alduwaisan A, Alali M, Faour H, Al Homoud H, Alsaleh A. Gallbladder-associated symptomatic hepatic choristoma: should you resect? Int J Surg Case Rep. 2017;41:243-6.
4. Weber-Alvarez P, Weber-Sánchez LA, Carbó-Romano R, Garteiz-Martínez D. Laparoscopic treatment of hepatic choristoma in the gallbladder wall: a clinical case presentation and literature review. Rev Gastroenterol Mex. 2017;82:189-90.
5. Sato S, Watanabe M, Nagasawa S, Niigaki I, Sakai S, Akagi S. Laparoscopic observations of congenital anomalies of the liver. Gastrointest Endosc. 1998;47:136-40.
6. Castro-Viera GA, Sanuy ME, Camara HA, Cordoba OC. Accessory liver in gallbladder: A propos of a case report. Rev Esp Enferm Dig. 1990;77:295- 6.
7. Leone N, De Paolis P, Carrera M, Carucci P, Musso A, David E, et al. Ectopic liver and hepatocarcinogenesis: report of three cases with four year's follow-up. Eur J Gastroenterol Hepatol. 2004;16:731-5.
8. Caygill CP, Gatenby PA. Ectopic liver and hepatocarcinogenesis. Eur J Gastroenterol Hepatol. 2004;16:727-9.
9. Zhou YZ, Chen J, Liu Z, Wang K, Wang C, Huan T, et al. Why does Ectopic Liver Tissue on the Gallbladder rarely have malignant transformation: Case Series. Rev Esp Enferm Dig. 1995;79:115-9.
10. Sánchez GR, Patricio GVL, Vázquez RJA. Coristoma hepático: Reporte de caso en intervención quirúrgica laparoscópica en el Hospital General de Zona Número 2 del Instituto Mexicano del Seguro Social, Tuxtla Gutiérrez Chiapas. Rev Mex Cir Endoscop. 2009;10(3):130-2.
11. Hamdani S, Baron R. Ectopic liver simulating a mass in the gallbladder wall: Imaging findings. Am J Roentgenol. 1994;162:647-8.
12. Natori T, Hawkin S, Aizawa M, Asai T, Kameda Y, Ikuyohashi K. Intra-cholecystic ectopic liver. Acta Pathol Jpn. 1986;36:1213-6.
13. Watanabe M, Matsura T, Takatori Y, Ueki K, Koba-take T, Hidaka M, et al. Five cases of ectopic liver and a case of accessory lobe of the liver. Endoscopy. 1989;21:39-42.
14. Lundy J, Johnson E, Edwards K, Rivera D. Laparoscopic management of gallbladder-associated ectopic liver. J Soc Laparoendosc Surg. 2005;9:485-7.
15. Lemus-Gómez JL, Barba-Valadez LA, Márquez-Betanzos A, Ramírez-Gaona A, Uehara-Navarrete J. Coristoma hepático, hallazgo en colecistectomía laparoscópica. Rep Caso Cir Gen. 2019;41(2):111-4.

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