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Ectopic liver nodules: a rare finding during cholecystectomy

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SUMMARY: **Ectopic liver nodules: a rare finding during cholecystectomy.**

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The ectopic liver (or choristoma) is a rare condition found during autopsy or abdominal exploration for various indications.

The authors report two cases of ectopic liver found during laparoscopic cholecystectomy for acute cholestytis.

The ectopic liver tissue has been reported to develope in several sites as thoracic cavity, gastrohepatic ligament, adrenal glands, pancreas, esophagus and, above all, gallbladder. The Authors review the literature and report their experience as a contribution to the knowledge of this rare pathological entity.

RIASSUNTO: **Fegato ectopico: un raro reperto in corso di colecistectomia laparoscopica.**

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Il fegato ectopico (o coristoma) è una rara condizione che si può rilevare in corso di autopsia o durante l'esplorazione chirurgica dell'addome per varie indicazioni.

Gli Autori riportano due casi di fegato ectopico riscontrati durante colecistectomia laparoscopica per colecistite acuta.

Il tessuto epatico ectopico si può sviluppare in molteplici siti, come la cavità toracica, il legamento epato-gastrico, i surreni, il pancreas, l'esofago e soprattutto la colecisti. Gli Autori riportano la loro esperienza e fanno una ressegna della letteratura per contribuire alla conoscenza di questa rara entità patologica.

KEY WORDS: Ectopic liver - Laparoscopic cholecystectomy.
Fegato ectopico – Colecistectomia per via laparoscopica.

Introduction

The presence of hepatic tissue, located in an other position than the orthotopic one, is named choristoma (term established in 1904 by Albert) or, more commonly, ectopic or heterotopic liver.

It is a rare entity and documented cases of ectopic liver are less than 100 (4 during the autopsy and 72 during the surgical exploration or radiologic study). The ectopic liver is a tissue histologically normal, but it can be subjected to the same histopathological changes like the arthropic liver. It's usually asymptomatic, even if it can be associated to abdominal pain, portal hypertension and respiratory failure. The radiological diagnosis, before surgery or autopsy, is hard.

The Authors report their experience and a briefly review the literature. The aim of the study is to give a contribution to knowledge of this rare entity.

Case reports

Case 1

A 83 year old woman was admitted in elective setting at our tertiary level hospital for "gallstones".

The blood test analysis revealed slight rise of cholestasis indices; HBV and HCV tests were negative and the inflammatory markers were within normal range. A pre-operative hepatic ultrasonography showed only distended gallbladder with 3 small stones. The patient had no history of drinking, cirrhosis or other liver diseases.

An elective laparoscopic cholecystectomy was performed. At surgery, a subserosal ectopic liver nodule (1.4cm) on the left lateral side of gallbladder was found (Figs. 1, 2). The nodule seemed drizzled by an arterial branch that ran along the front part of the gallbladder. A

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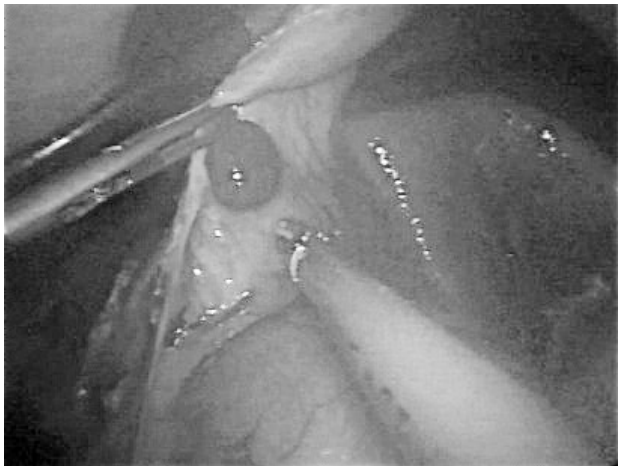

Fig. 1 - Case 1. Surgical finding.

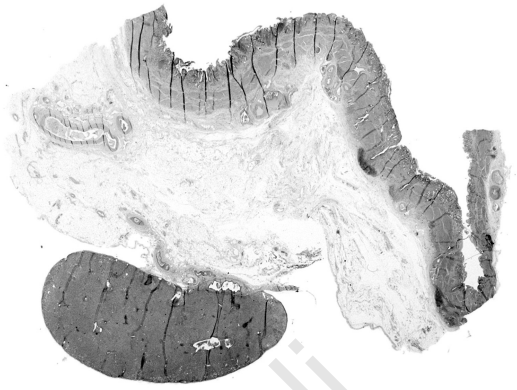

Fig. 2 - Case 1. Histology wall of gallbladder and the ectopic liver (2x).

standard laparoscopic cholecystectomy (1) including ectopic liver nodule was performed.

Postoperative course was uneventful and the patient was discharged on the third post-operative day.

Histology showed "hepatic tissue with evidence of portal spaces and sublobular veins associated to moderate distortion of trabecular architecture"; no island of malignant degeneration was found at pathology.

Case 2

A 72 year old woman was admitted in emergency setting at our tertiary level hospital for "acute cholecystitis".

The blood test analysis revealed only neutrophil leukocytosis (WBC 14610 and NEU 85.8%) and high level of LDH 234 IU/L. A pre-operative hepatic sonography showed only distended gallbladder with thicken walls and biliary sludge. The patient had history of hypercholesterolemia and 4 coronary stents.

For this reason an elective low pressure laparoscopic cholecystectomy (5-6 mmHg of pneumoperitoneum) was performed. At surgery, an ectopic liver nodule (approximately 1.5 cm) on the fundus of the gallbladder was found. The nodule had its vascular peduncle. A standard laparoscopic cholecystectomy, including ectopic liver nodule, was performed.

Postoperative course was uneventful and the patient was discharged on the fifth post-operative day. The histological examination showed "hepatic tissue with evidence of portal spaces and sublobular veins" without islands of malignant degeneration.

Discussion and conclusion

The ectopic liver is a rare condition. The first case dates back to 1922 (2): it was an ectopic liver lobe attached to the wall of gallbladder; another similar case was reported by Cullen in 1925 (3).

Documented cases of ectopic liver are 73 (excepted ours): 4 were found during autopsy and 69 during surgical exploration or radiologic studies (Table 1). The incidence ectopic liver during autopsy is 5.4% .

There is a simple classification (4) of this anatomical abnormality:

TABLE 1 - SITES OF ECTOPIC LIVER FROM LITERATURE.

During surgery	Cases (n)	Reference
Gallbladder	28	Our cases (2 pts) 2,4-28
Spleen	4	29,30
Retroperitoneum	8	6,19,31,32
Pancreas	3	33-35
Adrenal	2	36,37
Portal vein	2	3,38
Diaphragm	4	28,39-41
Stomach	1	5
Testis	1	43
Umbilical vein	2	44, 57
Biliar duct	1	45
Omentum	1	46
Intrathoracic	10	42, 47-55
Umbilical cord	1	56
Jejunum	2	58, 59
Heart	1	60
During autopsy		
Heart	1	61
Retroperitoneum	2	62,35
Gallbladder	1	5

1. ectopic liver, which is not connected to the "mother" liver and usually attached to the gallbladder or intrabdominal ligaments (as in our cases);
2. microscopic ectopic liver found occasionally in the gallbladder wall;
3. a large accessory liver lobe attached to the "mother" liver by a stalk;
4. a small accessory liver lobe attached to the "mother" liver.

Finding out an ectopic liver by imaging studies before surgery or during autopsy is rare because it often has a small size and/or the radiologists may not recognize this unusual entity. The ectopic liver usually is asymptomatic; rarely it can be associated with abdominal pain due to torsion of the stalk, bowel obstruction, portal vein thrombosis with portal hypertension, or respiratory failure when the ectopic mass is in the chest cavity.

The ectopic tissue have the same anatomic and structural characteristics of native liver and as well as the "mother" liver it is subject to the same histopathological changes such as steatosis, cirrhosis and hepatocellular carcinoma (HCC). Recent literature discusses the potential for increased risk of HCC in ectopic liver: several studies show as the hepatic heterotopic tissue has a greater tendency to malignant degeneration than mother liver (5).

The reports showed that, in absence of hepatic disease, the big liver ectopic nodules have a normal histological picture, differently in the small ectopic liver nodules (<2 cm) always coexist, even if aspecific, cellular and structural alterations as in our case.

For these reasons, we stress the need to remove and analyze always the operative specimen, to exclude areas of malignant degeneration.

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