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.
standard laparoscopic cholecystectomy (1) including ectopic liver no-
dule 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 trabecu-
ar 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 146/10 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 hy-
percholesterolemia and 4 coronary stents.
For this reason an elective low pressure laparoscopic cholecy-
stomy (5-6 mmHg of pneumoperitoneum) was performed. At sur-
gery, 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 no-
dule, 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 sublobu-
ar veins" without islands of malignant degeneration.

Discussion and conclusion
The ectopic liver is a rare condition. The first case da-
tes back to 1922 (2): it was an ectopic liver lobe attached
to the wall of gallbladder; another similar case was re-
ported by Cullen in 1925 (3).
Documented cases of ectopic liver are 73 (excepted ours): 4 were found during autopsy and 69 during sur-
gical exploration or radiologic studies (Table 1). The in-
cidence ectopic liver during autopsy is 5.4% .
There is a simple classification (4) of this anatomi-
cal abnormality:

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.

<table>
<thead>
<tr>
<th>TABLE 1</th>
<th>SITES OF ECTOPIC LIVER FROM LITERATURE.</th>
</tr>
</thead>
<tbody>
<tr>
<td>During surgery</td>
<td>Cases (n)</td>
</tr>
<tr>
<td>Gallbladder</td>
<td>28</td>
</tr>
<tr>
<td>Spleen</td>
<td>4</td>
</tr>
<tr>
<td>Retroperitoneum</td>
<td>8</td>
</tr>
<tr>
<td>Pancreas</td>
<td>3</td>
</tr>
<tr>
<td>Adrenal</td>
<td>2</td>
</tr>
<tr>
<td>Portal vein</td>
<td>2</td>
</tr>
<tr>
<td>Diaphragm</td>
<td>4</td>
</tr>
<tr>
<td>Stomach</td>
<td>1</td>
</tr>
<tr>
<td>Testis</td>
<td>1</td>
</tr>
<tr>
<td>Umbilical vein</td>
<td>2</td>
</tr>
<tr>
<td>Biliar duct</td>
<td>1</td>
</tr>
<tr>
<td>Omentum</td>
<td>1</td>
</tr>
<tr>
<td>Intrathoracic</td>
<td>10</td>
</tr>
<tr>
<td>Umbilical cord</td>
<td>1</td>
</tr>
<tr>
<td>Jejunum</td>
<td>2</td>
</tr>
<tr>
<td>Heart</td>
<td>1</td>
</tr>
<tr>
<td>During autopsy</td>
<td></td>
</tr>
<tr>
<td>Heart</td>
<td>1</td>
</tr>
<tr>
<td>Retroperitoneum</td>
<td>2</td>
</tr>
<tr>
<td>Gallbladder</td>
<td>1</td>
</tr>
</tbody>
</table>
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 histopathologic 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 heterotropic 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.

References

32. Leone N, Saettone S, De Paolis P, Carucci P, Brunello F, De An...


