

## Letters to the Editor

### Diagnosis and surgical management of bile leak complicated after blunt liver injury

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*Key words: Biloma. Liver trauma. Election of diagnostic technique. Drainage.*

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Dear Editor,

Hepatic trauma is a complication frequently associated with serious abdominal injuries. The degree of hemodynamic instability of the patient will determine the necessity of urgent surgery. When dealing with a polytraumatized patient with suspected hepatic injury, computerized axial tomography (CT) is the diagnostic technique of choice in order to evaluate the seriousness of hepatic trauma. Biloma is a possible complication of hepatic traumas consisting in an encapsulated collection of bile within or out of the abdomen, usually located in the supramesocolic space, caused by trauma, iatrogeny or spontaneous perforation of the biliary tree or the gallbladder. Occasionally, the bile accumulated in the peritoneal cavity is well tolerated and no serious symptoms appear. This process has been defined as biliary ascitis and it occurs when the bile is sterile. Bilomas develop when this bile becomes encapsulated. Bilomas can be diagnosed by means of CT scan, although the helicoidal technique shows more specificity and can in turn be used for the percutaneous drainage of the collection. Nevertheless, endoscopic retrograde cholangiography (ERC) is also a useful technique to diagnose bile duct injuries.

#### Clinical case

Here we present the case of a 31-year-old male patient presenting with polytrauma as a result of a motor vehicle accident. A CT scan performed on admission reveals a hematoma affecting the hepatic hilus with extravasation of contrast in segments

Iva and b, VII and VIII spreading through most of the right hepatic lobe, although it is contained by Glisson's capsule, and with a small amount of free intraabdominal fluid. As the vital signs of the patient remain stable and he shows hemodynamic stability, we decide upon the conservative management of the hepatic trauma.

During his admission in the ICU, the patient presents elevated liver enzymes with GOT and GPT values around 1200 IU/l and increasing bilirubin levels. Radiologic tests did not show significant changes or obstruction of the intra or extra hepatic bile duct which could explain the increase in liver enzymes.

On the 7<sup>th</sup> day in the ICU, the patient presents with temperature, increasing leukocytosis and suspected development of a hepatic abscess. The patient is treated with antibiotics and liver enzymes gradually recover normal values. A control CT scan shows the reduction of the hepatic hematoma which has a diameter of 6 cm, but it also reveals subcapsular air bubbles suggesting overinfection of the bile collection. As the patient has not temperature and the white cell count is normal, the antibiotic regimen is maintained. A new CT scan reveals the enlargement of the hematoma which now has a diameter of 9.3 cm and contains mainly fluid and some lipid masses (Fig. 1). In view of these results, the patient undergoes surgery. Percutaneous puncture is discarded to avoid the risk of a bleeding hematoma. During surgery, we observe a biloma which is wrapped by the greater omentum, displacing the hepatic angle of the colon, formed in the liver (segments IV and V) and closely adhered to the costal wall. We perform surgical drainage of the biloma, mesohepatectomy (segments IV and V) with hemostasis and bilestasis of the region. The evolution of the patient was satisfactory and he was discharged 10 days after surgery.

As reported by different studies (1-3), most authors recommend initial conservative management of hepatic trauma in those cases in which hemodynamic stability can be maintained. But, if the hepatic injury is associated with lesions affecting other organs, patients require surgery due to the high mortality of conservative management in these cases (1). As regards our institution, the decision whether to undertake conservative management or not depends not only on the seriousness of the hepatic injury but also and, to a large extent, on the hemody-

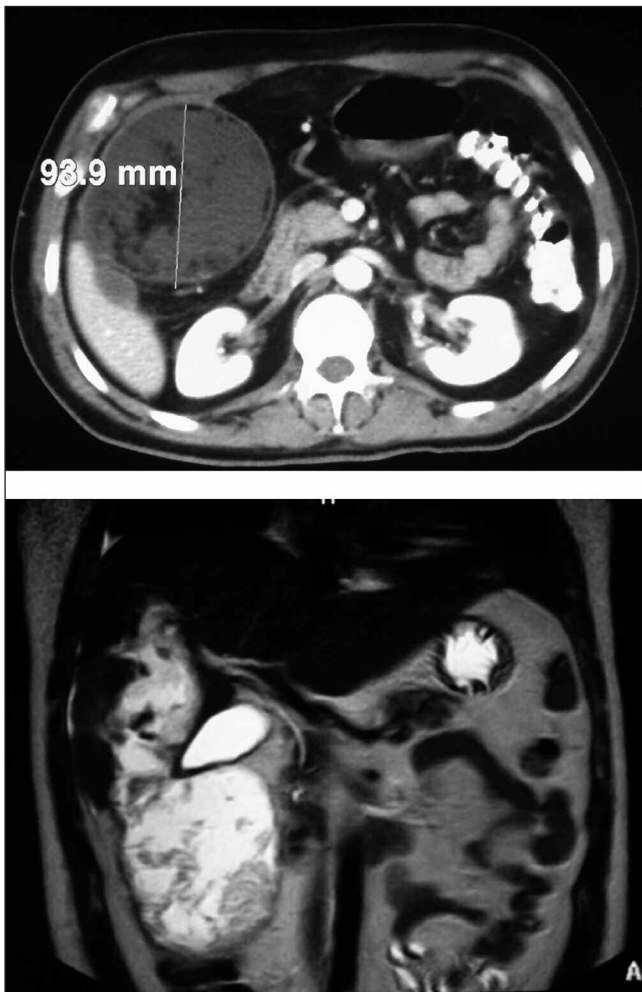


Fig. 1. (CT scan and NMR). Well-delimited focal lesion of 9.3 x 9.8 x 24 cm located in hepatic parenchyma. Inside we observe fluid content with dense areas alternating with hypodense areas of lipid content.

dynamic condition of the patient. In relation to the diagnosis of bilomas, from a radiologic point of view (CT scan or MRI) they appear as well-delimited, homogeneous focal lesions containing no septums or calcifications (4). Although abdominal echography is useful and usually enough to diagnose intra- and

extra-hepatic collections, abdominal CT scan with contrast is at present the technique of choice for the diagnosis of complications associated with hepatic and bile ducts injuries, as it makes it possible not only to accurately locate the intrahepatic collection but also to monitorize their progression or resolution as well as to perform the percutaneous puncture or drainage of the collection (3,5). MRI findings often overlap with those of CT scan, although cholangio MRI can identify lesions affecting the bile ducts (6). As regards posttraumatic hepatic collections, percutaneous CT-scan guided drainage is nowadays the preferred treatment (7). ERC with sphincterotomy and stent placement is employed in patients with sustained biliary fistula. In these cases, surgery is not a common treatment as the results obtained are similar but it increases morbidity.

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