

## Case Report

# Hepatic cyst: what diagnosis?

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### ABSTRACT

In this article, presented as the case of a 43-year-old patient with liver cyst posing the problem of positive diagnosis. The uncharacterizable radiology and the questionable serology have demonstrated the essential role of surgery and histological analysis in the management of this type of lesion. This case raises questions that patients and clinicians are often faced with in a hydatid disease endemic country. Through this article, we aim to discuss the latest news on diagnostic tools, the natural evolution of the disease, differential diagnoses as well as new treatment options for cystic hepatic lesion.

**Keywords:** Biliary cyst, Hydatid cyst, Diagnosis, Surgery, Histological analysis

## INTRODUCTION

Most liver cysts are benign and discovered incidentally, simple liver cysts are usually solitary and asymptomatic, although they cause abdominal discomfort when they are larger. A simple hepatic cyst is presumed to originate from the biliary tree, probably from micro hamartomas or peribiliary glands which isolate themselves from the bile ducts thus forming biliary cysts, they are generally without clinical consequences.<sup>1,2</sup> On the other hand, a biliary cyst can be confused with a hydatid cyst which remains a major public health problem in the world. The high sensitivity of abdominal imaging has led to the fortuitous discovery of cystic liver lesions.<sup>2,3</sup> We report the case of a 43-year-old patient who underwent total pericystectomy for a simple symptomatic hepatic cyst.

## CASE REPORT

Mr. B.T, 43 years old, with no particular pathological history or notion of contact with dogs, he has had minimal intermittent pain in the right hypochondrium for 3 months with a feeling of heaviness without fever or

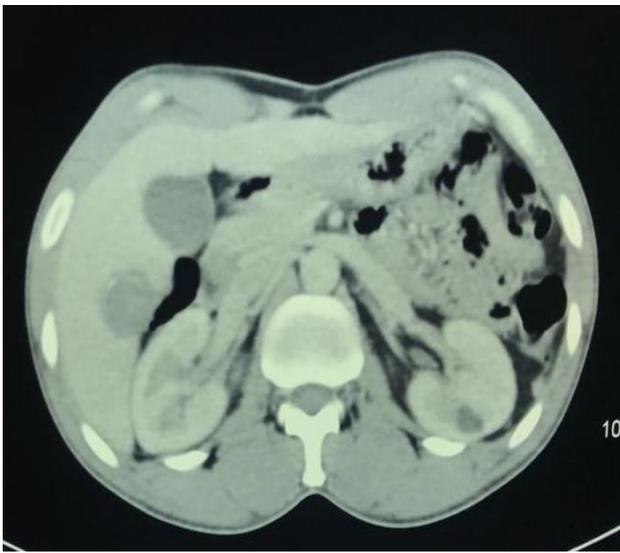
jaundice. All vital parameters were normal. Physical examination was unremarkable with negative Murphy's sign.

Routine laboratory tests, including liver panel and blood eosinophilia, were without anomalies. Abdominal ultrasound revealed a cystic lesion, measuring 20×20 mm, well defined, thick-walled, with fluid content and posterior reinforcement. Computed tomography (CT) with injection of contrast material showed a liver of normal size, of homogeneous density, contains in segment V a rounded formation, measuring 25×25 mm, of regular contours, hypodense, containing some calcifications, not characterizable on this examination (Figure 1). The radiological assessment was completed by a hepatic MRI revealing a hepatic mass between segment V and IV related to a hydatid cyst of the pseudo tumoral type measuring 25×25 mm, in iso signal T1 T2 with a hypointense shell related to calcifications, not enhanced after gadolinium injection (Figure 2). Faced with this radiological assessment and to guide the diagnosis, a western blot hydatid serology was requested coming back positive.

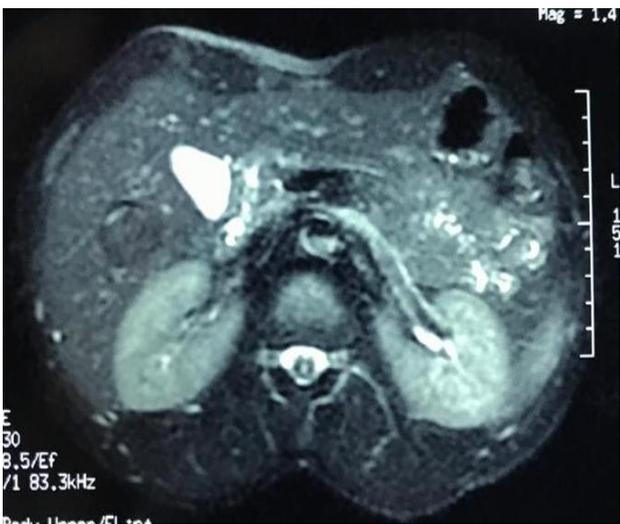
The surgical indication was therefore chosen for the management of a pseudo tumoral, calcified and symptomatic hydatid cyst. After a right subcostal laparotomy, the exploration revealed a yellowish cyst between segment IV and V with a calcified appearance (Figure 3). The puncture of the cyst did not bring back any fluid. A pericystectomy was then performed after a careful dissection (Figure 4).

The histological analysis was in favor of a biliary cyst including inflammatory changes without scolices or specific pathogens as well as the absence of histological signs of malignancy.

The postoperative surveillance was without abnormalities. Eight months after the surgery, the patient presented no complications and no signs of recurrence.



**Figure 1: Transverse CT scan of hepatic cyst and its calcifications.**



**Figure 2: Hepatic MRI of pseudo tumoral aspect of the hepatic cyst.**



**Figure 3: Intraoperative image of hepatic cyst after dissection.**



**Figure 4: Intraoperative image of residual cavity after pericystectomy.**

## DISCUSSION

Cystic hepatic lesions are frequent and most often benign. Liver cysts called “biliary cysts” are the most common diagnosis. It is defined as an unusual cavity separated from the hepatic parenchyma by a biliary-like epithelial coating and not communicating with the bile ducts. It is most often a single lesion.<sup>7,8</sup> It is also known by other names: non-parasitic cyst of the liver, benign hepatic cyst, congenital hepatic cyst, unilocular cyst or solitary cyst of the liver.<sup>9</sup> Hepatic cysts were considered a rare entity and were usually discovered during a laparotomy, until 1974 when a study reported an incidence of 17 per 10,000 cases explored.<sup>4</sup> The prevalence of simple hepatic cysts increased with the development of imaging to 5% with ultrasound and 18% with CT.<sup>5,6</sup>

The liver cysts are usually asymptomatic.<sup>1,2</sup> However, some symptoms can be suggestive: mass, arching, and heaviness or chronic pain in the right hypochondrium, as in the case of our patient.<sup>9</sup>

Ultrasound is sufficient to confirm the diagnosis of a simple biliary cyst.<sup>9,10</sup> CT is useful preoperatively to reveal severe forms and plan an operative strategy.<sup>9,10</sup> Usually, the simple hepatic cysts have regular contours, rounded, hypodense, before and after injection of contrast agent.<sup>8</sup> In this case, the scanner also showed some calcifications contained in the cyst without being able to characterize the lesion. This sign is a key element in the radiological diagnosis in certain lesions. The literature review found a wide variety in the frequency and etiologies of these calcifications: it may be infectious pathologies (tuberculosis, brucellosis, schistosomiasis, echinococcosis, etc.); benign tumors (hepatic adenoma, hepatic hemangioma, focal nodular hyperplasia, biliary cysts, cystadenoma, etc.) or malignant tumors (hepatocellular carcinoma, intrahepatic cholangiocarcinoma, epithelioid hemangio-endothelioma, primary hepatic lymphoma, cystadenocarcinoma, metastasis, etc.).<sup>18,19</sup> In biliary cysts the calcifications are quite frequent. They are punctate or curvilinear and localized along the cyst wall.<sup>17,18</sup> As for hydatid cyst, it is a classic cause of calcified hepatic lesion. The calcifications are typically parietal, curvilinear and then diffuse all around the cyst. In the late stage, the appearance is that of a rounded or oval calcified mass, denser at the periphery, with irregular contours, related to a dead parasite that has been globally calcified.<sup>19</sup> A hepatic MRI was requested, coming back in favor of a hydatid cyst of the pseudo tumoral type thus posing the problem of the positive diagnosis based on radiology.

The differential diagnosis of biliary cysts is very large, it includes mainly cystadenoma and hydatid cyst, hence a preoperative echinococcus serology is important to guide the diagnosis. Several immunological techniques can be practiced, the most used in this training is the immunoblot (western blot) having excellent sensitivity and specificity, it is applied as a confirmatory test in case of positivity or doubtful results of other tests.<sup>22</sup> However, false positive reactions are possible as is the case with our observation. Generally, they are due to other helminthiasis, to hepatocarcinoma, or to immune disorders. In addition, false negative reactions may be seen with inactive calcified cysts or humoral immune deficiency.<sup>20,21</sup> Therefore, the positive diagnosis of a liver cyst is not always obvious and calls into question the reliability of the tests requested.

The natural evolution of the disease can lead to complications, namely: the compression of the bile ducts or adjacent organs, wall erosion, bleeding, intraperitoneal rupture and superinfection by hematogenous or biliary routes. The literature does not report any case of malignant degeneration.<sup>8</sup> In this case, the cyst evolved into a pseudo tumoral, calcified and symptomatic form, confusing with a hydatid cyst.

The treatment of a cystic liver lesion depends on certain preoperative factors: the presence of symptoms, the appearance of the cyst on imaging and the occurrence of

complications. Laparoscopic resection of the protruding dome with drainage of the residual cavity is the standard treatment for a symptomatic hepatic cyst. This minimally invasive technique is simple and low risky with rapid postoperative recovery.<sup>8,9</sup> Other surgical methods are less practiced including cystectomy, pericystectomy, lobectomy or hepatectomy. These radical techniques are effective at the cost of significant morbidity (50%).<sup>11</sup> The purpose of a cystectomy is a complete En-bloc-resection of the cyst. The lack of a pericystic cleavage plane constrains resection of the sane liver and defining pericystectomy.<sup>12</sup> This technique was adopted in our patient due to the doubtful diagnosis as well as the pseudo tumoral and calcified nature of the cyst.

Non-operative treatment is based on the one hand on the puncture-aspiration method alone, which has been abandoned due to the high rate of recurrence (100%).<sup>9</sup> On the other hand, on percutaneous sclerotherapy which gives good results but it is often poorly tolerated because of intense abdominal pain, especially after alcohol use.<sup>9,13</sup>

The histological analysis of the operative specimen must be systematic to resolve the diagnostic doubt which characterizes this type of lesion and not to ignore mucinous cystadenomas. These can degenerate into cystadenocarcinomas and require complete resection.<sup>14,8</sup> In this case, it is a biliary cyst with inflammatory change. This rearrangement of a cyst corresponds to a structural modification, especially parietal, following inflammatory phenomena after aging and/or infection of the cyst. Its contents become purulent and its pericyst thicker or even calcified. These changes make cyst fragile and promote certain complications, namely rupture or biliary fistula.<sup>16</sup>

The postoperative complications are dominated by suppurations of the residual cavity.<sup>14,15</sup> In this case, the consequences were simple due to the absence of the septic context and the use of epiplooplasty.

## CONCLUSION

Diagnostic problems with cystic liver tumors are frequent, especially since some cysts cannot be characterized on radiological imaging with questionable serology, calling into question the reliability of the tests requested. Surgical treatment and histological analysis make it possible to obtain a certain diagnosis and a lasting disappearance of the lesion.

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