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Hemorrhagic Hepatic Cyst Mimicking a Cystic Neoplasm: Case Report

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Abstract **Case Report**

***Background*:** Intracystic hemorrhage is an extremely rare complication of simple hepatic cysts. Clinical symptomatology is non-specific, and imaging frequently mimics a biliary cystadenoma or cystadenocarcinoma, which makes it challenging from a diagnostic point of view to an appropriate therapeutic approach. In this report, we present a case of a simple hemorrhagic hepatic cyst mimicking a cystic neoplasm. ***Case Report*:** 48-year-old men was referred to our hospital for periumbilical abdominal pain with asthenia and 11 kg weight loss. His physical examination and laboratory findings were unremarkable. Carcinoembryonic antigen concentration was three times higher than normal. Abdominal ultrasonography demonstrated an impure cystic mass measuring 120 x 96 x 108 mm on hepatic segments VI and VII. Abdominal CT showed a cystic mass at the liver possibly related to a cystadenocarcinoma. Abdominal MRI revealed a cystic mass with lobulated contours, located in segments VII, VIII and part of VI, measuring 11.8 x11.4 cm long axis, heterogeneous signal with intense fluid towards the top in T1 and T2 and intense fluid towards the decline in T2 and T1, with the appearance of a small inferior septum slightly enhanced after injection. These findings did not exclude the possibility of malignant cystic tumor, such as biliary cystadenocarcinoma. Therefore, endoscopic ultrasound showed a cystic lesion developing in the liver, with a thickened wall in places, mainly adjacent to an intracystic nodule of 25 mm, this nodule continued with the wall. Biopsy performed using a 22G ultrasound. Aspiration of liquid: string test negative. Pathological examination confirmed a hemorrhagic biliary cyst and there was no tumor tissue. We observed a significant improvement in symptoms and reduction in cyst size after needle aspiration and we decided to adopt a conservative approach. The patient was followed and one year later, the patient remained in good condition without any complaints. ***Conclusion*:** Hemorrhagic hepatic cyst represents a difficult diagnosis due to its imaging similarities with other cystic or mucinous hepatic lesions. MRI signal intensities help differentiate the bleeding contents of a cyst from other mucinous cysts. All of these elements can lead to an accurate diagnosis and guide appropriate therapeutic decisions.

Keywords: Hemorragic hepatic cyst, cystic neoplasm, simple hepatic cyst.

INTRODUCTION

Simple hepatic cysts are generally asymptomatic and are often detected incidentally on ultrasound or CT scan. They may present complications that include compression (biliary, vascular, digestive, pulmonary) in 3-9% of cases, intracystic hemorrhage in 2-5%, infection in 1% and rarely intra- or extra-peritoneal cyst rupture [1, 2].

Intracystic hemorrhage is an extremely rare complication of simple hepatic cysts. Clinical symptomatology is non-specific, and imaging frequently mimics a biliary cystadenoma or cystadenocrcinoma, which makes it challenging from a diagnostic point of view to an appropriate therapeutic approach.

In this report, we present a case of a simple hemorrhagic hepatic cyst mimicking a cystic neoplasm.

CASE REPORT

48-year-old men was referred to our hospital for periumbilical abdominal pain with asthenia and 11 kg weight loss. The patient was receiving medication for diabetes. His physical examination and laboratory findings were unremarkable. Tumor markers such as alpha- fetoprotein, and carbohydrate antigen 19 - 9 (CA 19-9) were normal. Carcinoembryonic antigen concentration was three times higher than normal. Abdominal ultrasonography demonstrated an impure cystic mass measuring 120 x 96 x 108 mm on hepatic segments VI and VII (Figure 1). Abdominal CT showed a cystic mass at the liver possibly related to a

cystadenocarcinoma. Abdominal MRI revealed a cystic mass with lobulated contours, located in segments 7,8 and part of 6, measuring 11.8 x11.4 cm long axis, heterogeneous signal with intense fluid towards the top in T1 and T2 and intense fluid towards the decline in T2 and T1, with the appearance of a small inferior septum slightly enhanced after injection (Figure 2).

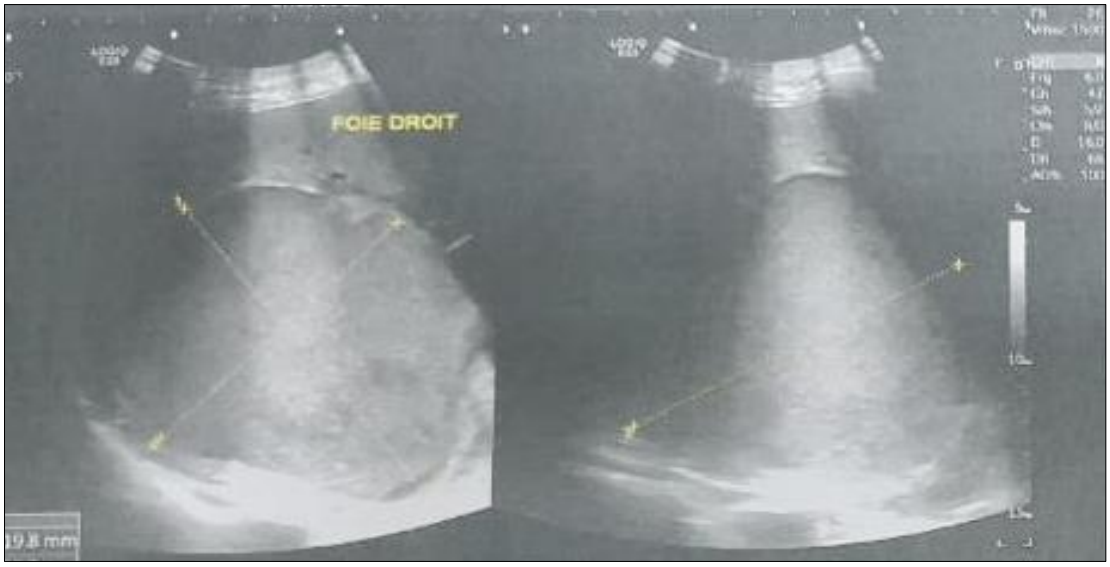

Figure 1: Abdominal ultrasonography (US) revealed a cystic mass on hepatic segments VI and VII

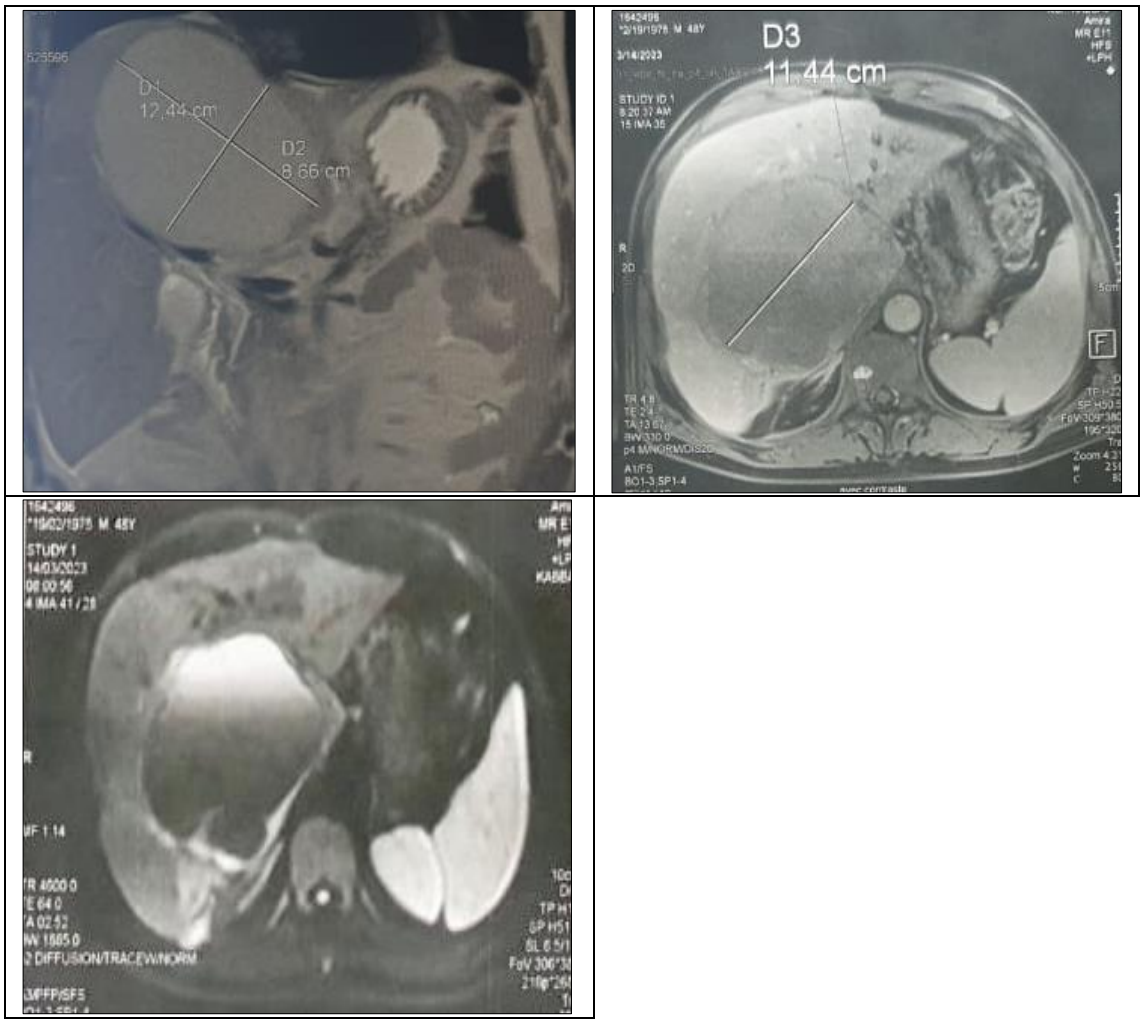

Figure 2: MRI showing a cystic mass in the liver

These findings did not exclude the possibility of malignant cystic tumor, such as biliary cystadenocarcinoma. Therefore, endoscopic ultrasound showed a cystic lesion developing in the liver, with a thickened wall in places, mainly adjacent to an intracystic nodule of 25 mm, this nodule continued with the wall (Figure 3). Biopsy performed using a 22G ultrasound. Aspiration of liquid: string test negative. Pathological examination confirmed a hemorrhagic biliary cyst and there was no tumor tissue. We observed a significant improvement in symptoms and reduction in cyst size after needle aspiration and we decided to adopt a conservative approach. The patient was followed and one year later, the patient remained in good condition without any complaints.

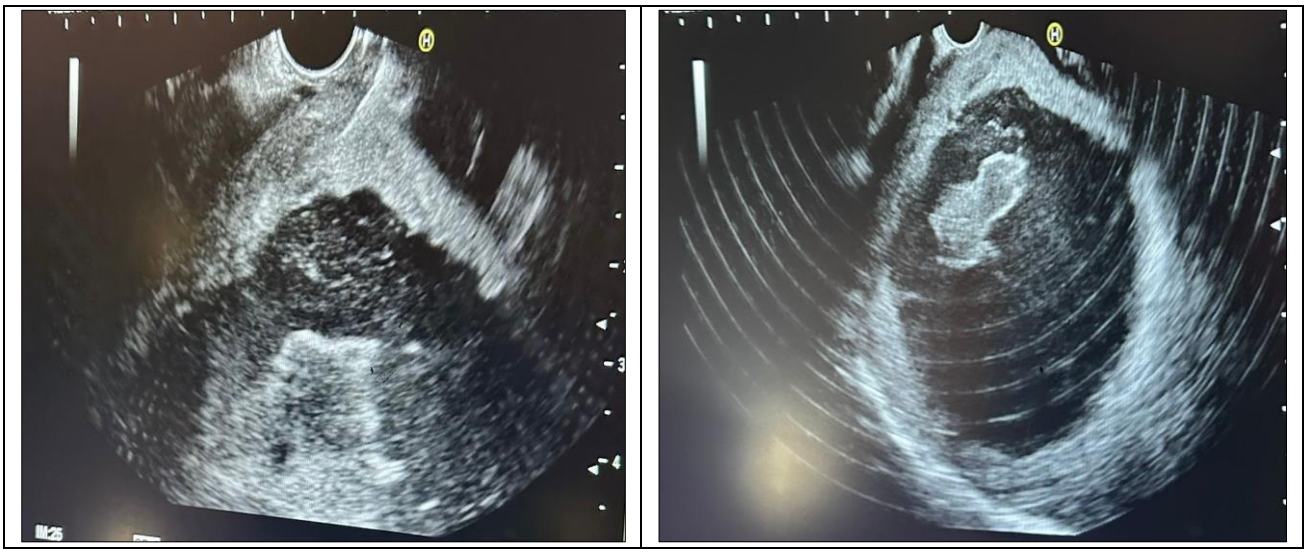

Figure 3: EUS showing a hepatic cystic mass with a thickened wall

DISCUSSION

Simple hepatic cysts are common with a prevalence of up to 5% on ultrasound and 15% on CT [3]. They arise from congenital malformations of the bile ducts which do not communicate with the biliary tree.

Simple hepatic cysts are generally asymptomatic, discovered incidentally on imaging. The symptomatology is nonspecific, often manifested by abdominal pain.

Intracystic hemorrhage is a rare complication which without rupture can be asymptomatic or manifest with benign symptoms. Clinical signs depend on the size, location and complications of the cysts.

Imaging of hemorrhagic hepatic cyst is similar to that of cystic neoplasms, including biliary cystadenoma or cystadenocarcinoma [4]. Common features are a thick wall, thick septa, and mural nodules [5, 6].

Ultrasound may show a cystic hepatic mass, hyperechoic septa, thickened cyst wall, and mural nodules that are suggestive of hemorrhage. These signs are also diagnostic features of malignant neoplasms, which increases the difficulty of differential diagnosis. Contrast-enhanced ultrasound is a newer technique that uses microbubbles to show vascular flow within septa or solid cyst components that should be absent in hemorrhagic cysts [5].

Contrast-enhanced CT scan identifies the intracystic hemorrhage as an area of high density, while MRI will show high intensity on T1 and T2 weighted sequences. Mural nodules that do not enhance on MRI are suggestive of the organized hematomas typical of hemorrhagic hepatic cysts and may therefore help differentiate them from cystic neoplasms [4]. As shown in a study carried out by Fong *et al*., regarding 24 cases of hemorrhagic hepatic cysts, which noted that a characteristic appearance of intracystic hypersignal surrounded by a hypointense border corresponded to a liquefying hematoma very suggestive of a benign hemorrhagic hepatic cyst [4].

The therapeutic approach to hemorrhagic hepatic cysts varies from simple observation to more invasive treatment. Asymptomatic or mildly symptomatic hemorrhagic cysts can be initially treated with a conservative approach with repeated imaging monitoring to monitor progress. If symptoms worsen or persist, laparoscopy or surgery with biopsy of the cyst wall or enucleation is indicated.

The role of sclerotherapy in the treatment of hemorrhagic hepatic cysts was demonstrated by Benzimra *et al*., in this retrospective study, 20 patients who underwent ultrasound-guided percutaneous ethanol-based sclerotherapy after needle aspiration reported

significant clinical improvement with reduction in cyst size [7]. Aspiration alone has been associated with a high recurrence rate [6].

In conclusion, hemorrhagic hepatic cyst represents a difficult diagnosis due to its imaging similarities with other cystic or mucinous hepatic lesions. MRI signal intensities help differentiate the bleeding contents of a cyst from other mucinous cysts. All of these elements can lead to an accurate diagnosis and guide appropriate therapeutic decisions.

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