Case Report

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Imaging appearance of Ciliated Hepatic Cyst

Daoud Ali Mohamed*; Abdelmoughit Hosni; Amarkak.Waiss; Behyamet Onka; Nabil Moatassim Billah; Itimad Nassar

Central Radiology Department, University Hospital Center Ibn Sina, Rabat, Morocco.

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***Corresponding Author:** Daoud Ali Mohamed, Radiology Department, University Hospital Center Ibn Sina, Rabat, Morocco.
Tel: +212766146254
Email: daoudkabir88@gmail.com

Abstract

Ciliated hepatic cyst is a benign, solitary, and rare lesion. It was described in 1857 by Friederich but its current name dates from 1984. Diagnosis of Ciliated hepatic cyst can be difficult because they are often asymptomatic and, in rare cases, may progress to a malignant tumor. The definitive diagnosis is based on histological examination. Since the advent of imaging, especially magnetic resonance imaging, diagnosis has become easier and easier. Most of the published cases have been published in the last 20 years by advances in medical imaging. We report here a case of ciliated hepatic foregut cyst observed on ultrasound, on computed tomography, and on magnetic resonance imaging in a 41-year-old woman.

Keywords: Ciliated hepatic foregut cyst; ultrasound; magnetic resonance imaging;n computerized tomography.

Case Report

A 41-year-old woman, without pathological history, presented right flank nephritic pain and microscopic hematuria. She was referred to our hospital for an uro-computerized tomography (CT) scan without urinary tract and intra-abdominal abnormalities. But showed incidentally a uninocular cyst in segment IVb of the liver containing an isodense zone and a hyperdense sloping zone without enhancement (17,5x22mm) (**Figure 1**). We immediately performed an abdominal ultrasound to characterize this lesion. Ultrasound showed a unilocular cyst in segment IV, well defined, with regular bords, a double component with an anechoic liquid area and a mobile hyperechoic area when changing position (**Figure 2**). The biological examination was without abnormality, in particular the serology of hydatidosis. She also had a breast ultrasound and tumor marker test, which were negative. To better characterize this lesion, hepatic MRI was performed showed, hyperintense T2, with bright zone and sloping zone on T2-WI, hypo intense T1 without restriction on diffusion and no enhancement after contrast injection (21x17 mm). Bili-MRI cannot find communication with the bile duct and we retained the diagnosis of ciliated hepatic cyst (CHC) (**Figure 3**). The patient did not undergo surgery as she refused and opted for follow-up ultrasound monitoring. Follow-up ultrasound performed at 6 and12 months after MRI showed a liver lesion of similar size and appearance to the initial ultrasound (**Figure 4**). The patient is so far in good general condition, reports mild and inconsistent pain in the right upper quadrant, with no other functional signs.

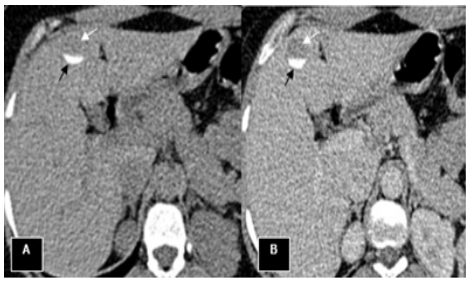

Figure 1: *Axial CT showed CHFC without injection (A) and no enhancement after injection (B) showed incidentally a uninocular cyst in segment IVb of the liver containing an isodense zone (white arrow) and a hyperdense sloping (black arrow) zone without enhancement.*

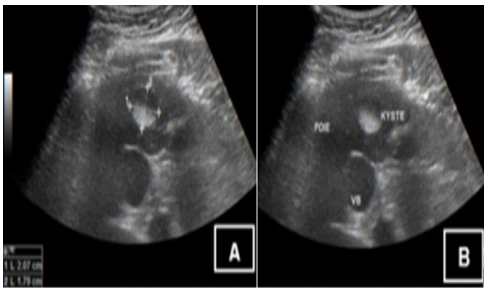

Figure 2: *ultrasound image: unilocular cyst in segment IV, well limited, with regular borders, double component with an anechoic liquid area and a sloping hyperechoic area smaller<4 cm (Foie= Liver, VB (Vésicule Biliaire= Gallbladder, Kyste= cyst).*

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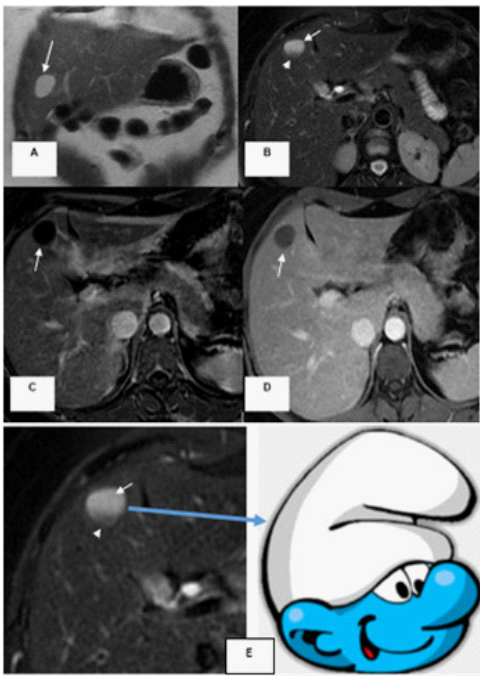

Figure 3: *Magnetic resonance imaging (MRI) showed, hyperintense (white arrow) on coronal T2 (A), with bright zone (white arrow) and with slopind zone (arrow head) on axial T2-WI (B) realizing the look of the smurf's head (E), without enhancement after contrast injection (axial C, D).*

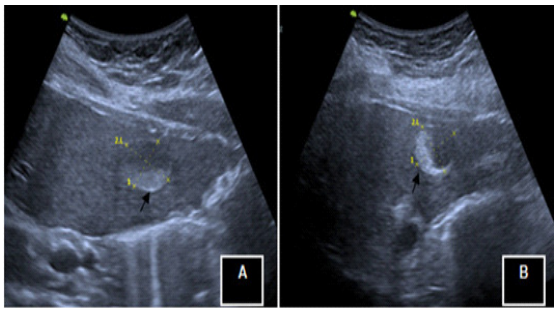

Figure 4: *Control ultrasound six months after showing a similar aspect of CHC in dorsal decubitus (A), with intra-cystic hyper-echogenic sediment mobile in lateral decubitus (black arrow) (B).*

Discussion

Ciliated hepatic foregut cyst (CHFC) is a benign, solitary, and rare lesion [1, 2]. To date, nearly 109 cases have been reported [3, 4]. It was described in 1857 by Friederich but its current name dates from 1984 [5, 6]. It is suspected that a CHFC is a detached hepatic diverticulum or abnormal tracheo-bronchial bud that may have migrated caudally, to be included with the liver during the early embryonic development of the foregut hence the terminology of ciliated hepatic cyst of the foregut (CHFC) [2, 5, 6]. CHFCs are discovered incidentally very often during imaging, operative exploration or autopsy, because they are often clinically asymptomatic. But can manifest as abdominal pain in the right upper quadrant, sometimes as non-specific pain. Therefore, the prevalence and incidence remain difficult to determine [1, 2]. The age of discovery is most often around fifty, but can occur at any age. CHFCs are generally seen more in women [1, 2]. With the accessibility and advancement of imaging, diagnosis of CHFC is increasing. Classically, CHFCs are small (<4 cm) unilocular and avascular, and fluid-filled, and the appearance on imaging is variable often attributed to the elements of the cyst contents, including clear serous to white or brown material with different viscosities, located in the medial segment of the left hepatic lobe (segments 4 A and 4B [1, 2, 6]. Ultrasound evaluation usually reveals as a well-defined anechoic or hypoechoic small masses and hyperdense without enhancement on CT. Large variability is seen on MRI T1-weighted imaging, including T1 hyper- or hypointensity. They may also show a fluid–filled layer due to the presence of fatty or protein-rich contents [1]. But CHFFCs are nearly exclusively hyperintense on T2 weighted imaging (usually not as hyper intense as a simple cyst) [1, 2, 3, 7]. The differential diagnosis for this lesion includes other unilocular hepatic lesions, such as simple hepatic cyst, echinococcal cyst, epidermoid cyst, pyogenic abscess, intrahepatic choledochal cyst, mesenchymal hamartoma, hypovascular solid tumor, and hepatobiliary cystadenoma or cystadenocarcinoma [1, 2, 7]. Definitive diagnosis is made through histology which reveals a pseudostratified columnar epithelium, subepithelial connective tissue layer, smooth muscle layer, and outer fibrous capsule [1, 5]. Rates of malignant transformation were reported to range from 3% to 5% with squamous cell carcinoma being the most common malignancy [3, 8]. The current management of CHFC remains controversial. Some believe they are incidental findings and generally asymptomatic, and therefore recommend observation [9]while others recommend a more aggressive approach, such as aspiration or surgical resection, due to a few reported cases of malignant transformation [10, 11, 12]. Overall, most authors agree that CHFCs should be surgically resected for cysts larger than 4–5 cm, lesions that are symptomatic or show interval growth, or asymptomatic lesions with worrying findings on imaging, such as focal wall abnormalities or thick septations [2, 13].

Conclusion

In conclusion, CHFC is a rare hepatic lesion. Very often asymptomatic and uncovered, imaging including ultrasound and especially MRI allows the diagnosis to be made. The definitive diagnosis remain histological. Due to rare reported cases of malignant transformation, CHFC may require ultrasound follow-up or resection.

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