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Hydatid Cyst of the Liver revealed at the stage of superinfection: Contribution of imaging: A case report

Abdelilah Mouhsine[1, *], Badr Ait idir[2], Ahmed Belkouch[3], El Mehdi Atmane[1], Redouane Rokhssi[1], Youssef Berrada[1], Lahcen Belyamani[3], Khalid Sair[2], M'barek Mahfoudi[1], Abdelghani El Fikri[1]

[1]Department of Imagery, Avicenna Military Hospital, Faculty of Medicine and pharmacy, Marrakech, Morocco
[2]Department of General Surgery, Mohammed V Military Hospital of Instruction, Faculty of Medicine and pharmacy, Rabat, Morocco
[3]Emergency Department, Mohammed V Military Hospital of Instruction, Faculty of Medicine and pharmacy, Rabat, Morocco

Email address:
abdelilahmouhsine@yahoo.fr (A. Mouhsine), aitidirbadr@gmail.com (B. A. Idir), belkouch1@gmail.com (A. Belkouch)

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Abstract: Hydatid cyst of the liver remains a frequent parasitic disease caused by the development of the larval form of Echinococcus granulosis; it is often discovered incidentally during routine symptoms, rarely at the stage of complications. However, the diagnostic difficulties and pitfalls are numerous due to the differential diagnosis of the liver's cystic lesions, despite the current improvement of cross-sectional imaging (ultrasound, CT and MRI). We report a case of a hydatid cyst of the liver discovered during a secondary infection, emphasizing the contribution of imaging and serology that can confirm the diagnosis before starting any therapeutic procedure.

Keywords: Hydatid Cyst, Liver, Superinfection, Imagery

1. Introduction

Hydatid cyst of the liver is a parasitic disease which is still widespread; it is a major public health problem in highly endemic countries including Morocco.

Clinical aspects of hydatid cyst of the liver are very diverse. The hydatid disease is often discovered incidentally during imaging studies prescribed for trivial symptoms, or at the stage of complications: compression, infection or rupture of the cyst.

It is a challenging condition due to the differential diagnosis with other cystic lesions of the liver. Imagery coupled to serology is helpful in these cases.

2. Case Report

A 40 years old man with no history was admitted in the emergency room complaining of a dull pain located in the right upper abdominal quadrant that has evolved over six months and since two days accompanied by fever, chills and nausea without vomiting and without bowel disorders.

Physical examination found a patient with poor general condition, febrile at 38˚C, there was no jaundice, and clinical examination revealed a defense of the right upper quadrant with hepatomegaly. Laboratory tests revealed an infectious syndrome with Hyperleucocytosis of 15000WBC/mm, CRP of 120 and without liver blood test abnormalities. Serology of amebiasis was negative. Hydatid serology blood test was positive. Abdominal ultrasonography showed a single round formation, hypo echoic finely partitioned, and encapsulated with posterior enhancement echoes, measuring 8 cm in diameter occupying the right hepatic lobe and pending outside of it seat of a sloping parietal calcification. The hepatic bile ducts were not dilated.

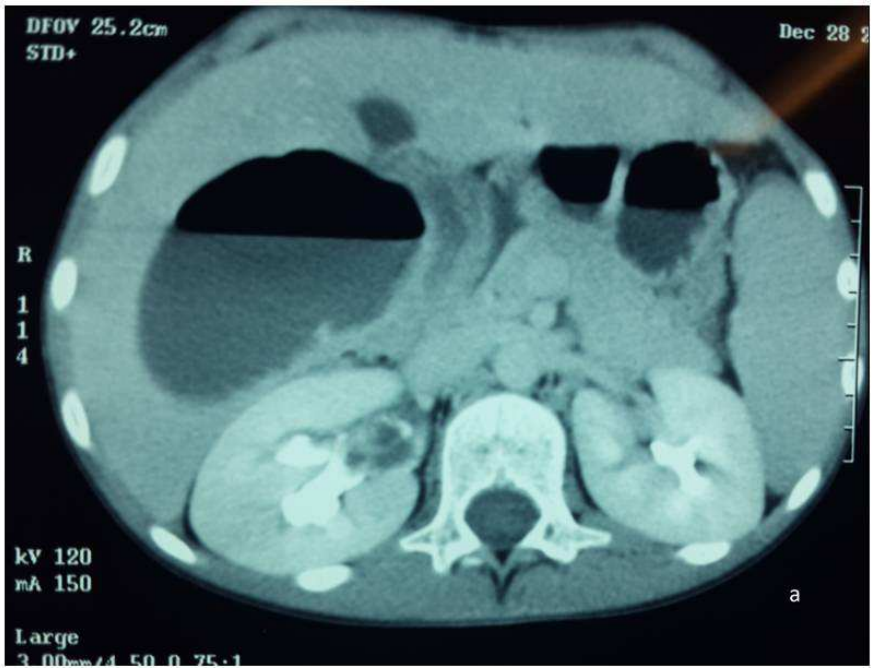
An abdominal helical CT scan performed after injection of contrast media in parenchymal phase showed a large hepatic cystic lesion located in segments VI, VII and VIII of fluid density finely partitioned in some parts, seat of a sloping parietal calcification, and a hydro aeric level probably iatrogenic secondary to the earlier attempt of puncture in another medical facility. This lesion is pending in the peritoneum it measures about 10 cm along the major axis and it almost reaches the ipsilateral psoas muscle. The cyst wall was heightened after injection of contrast attesting the superinfection (figure 1a, b, c).

The primary diagnoses discussed were amoebic liver

abscess and pyogenic hepatic cyst and superinfected cyst of the liver (hydatid cyst, infected hepatic cyst ...). The diagnosis of stage III superinfected hydatid cyst was established based on the semiological signs in imaging, and positive hydatid serology.

The patient had undergone surgery on the day after admission; we performed an unroofing and flattening of the cyst with external drainage of the residual cavity,

Histological examination concluded to a hepatic hydatid cyst, bacteriological study detected Gram-negative bacilli, and adapted antibiotic treatment was started. The postoperative period was uneventful.



(a)

(b) (c)

Figure 1. a, b, c. *Abdominal helical CT scan performed after injection of contrast media in parenchymal phase in axial (figure 1a) cut with coronal reconstructions images (figure 1b, c) showing the hepatic cystic lesion located in segments VI, VII and VIII of fluid density, finely partitioned in some parts, seat of a sloping parietal calcification, and a hydro aeric level. This lesion is pending in the peritoneum and it almost reaches the ipsilateral psoas muscle. The cyst wall was heightened after injection of contrast attesting the superinfection.*

3. Discussion

Hydatid cyst of the liver is major public health problem in highly endemic countries including Morocco it is due to the accidental infestation of humans by the larval form of the parasite. Clinical aspects of this disease are polymorphic and it essentially raises the problem of differential diagnosis.

The bacterial infection of the hydatid cyst is most often secondary to fistula in the biliary tract [1].

The abscess is due to its colonization by digestive bacteria after erosion of the bile ducts; the proliferation of pyogenic germs causes suppuration and sometimes the processing of a collection pyo gaseous [2, 3, 4].

Superinfected Hydatid cyst raises the problem of differential diagnosis with liver abscess:

on the onset, the abscess often presents as multiple small liquid lesions sometimes appearing confluent.

At sub-acute stage, necrosis and liquefaction become

predominant. The presence of air within a focal hepatic lesion is highly suggestive outside the context of biliary catheterization or rupture in a hollow organ [5].

Puncture of hydatid cyst exposes to extremely serious complications such as anaphylaxis and intraperitoneal dissemination. Therefore, no intrahepatic cystic images can be punctured before been sure that it is not a hydatid cyst; history-taking and serology are useful. [6, 7].

However, amebic or pyogenic abscesses can be punctured under ultrasound or CT scan guidance for diagnostic and therapeutic purposes. [8]

Ultrasound is the first line examination with sensitivity of 85 to 95% [9]. The form and size of abscesses are variable. Their echogenicity depends on the stage of evolution. The ultrasound aspect of a liver abscess is highly polymorphic and poorly specific. The main contribution of ultrasound is to guide the diagnostic puncture or therapeutic drainage.

The diagnosis based on ultrasound is almost certain in hydatid cysts type 2 and 3. Type 5 is also evocative in association with epidemiological evidence. On the other hand, types 1 and 4 can raise challenging differential diagnosis.

Computed tomography (CT) comes next. Thanks to its higher spatial resolution, it overcomes the poor review and the interest of clarifying the relationship of the cyst with vasculo biliary pedicle (3,9,10). A superinfection is recognized as a cyst with thickened walls, enhanced after injection of contrast, sometimes with infiltration of neighboring structures and the presence of air in case of anaerobic bacteria bubbles. The magnetic resonance imaging (MRI) is currently the method of choice in exploring superinfected hydatid cysts (5.11).

Hydatid serology blood test is the corner stone to establish the final diagnosis. It allows the diagnosis in 80-95% of cases [4]. The ease of this test and its relatively low cost allows the post-treatment surveillance.

4. Conclusion

In an endemic context, positive and topographic diagnosis of hepatic Hydatidosis has become easy thanks to advances in medical imaging, however, it is still made at the stage of complications, despite the current availability of cross-sectional imaging (ultrasound, CT and MRI).The radiological semiology and Hydatid serology help to confirm the diagnosis and start the appropriate therapy.

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