

Primary Kidney and Psoas Hydatid Cyst: A Rare Double Anatomic Location

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Received: August 20, 2019; **Published:** December 06, 2019

Abstract

Hydatidosis is an anthroponosis known even from Hippocrates. It is caused by the human development of the larval form of the dog's disease, *Echinococcus granulosus*. The most common visceral localizations are 60% and 30% lung. The clinical picture depends on the organs involved. Thus, rupture of the cyst and its effects on adjacent organs can cause serious complications. In the majority of cases the treatment is essentially surgical.

Keywords: Hydatid Cyst; Kidney; Psoas

Introduction

Hydatidosis is an anthroponosis caused by human development of the larval form of the dog's disease, *Echinococcus granulosus*. Renal localization is rare: less than 5% of visceral forms. The most common visceral locations are liver 60% and lung 30% [1].

Case Report

A 55-year-old man, a farmer by profession, developed left lumbar pain for 10 months in an afebrile and general-state conservation context. It does not report hematuria or lower urinary tract symptoms. On examination, there is positive lumbar contact. Apart from an increase in the number of eosinophils, the biological blood test is without particularity.

Computed tomography revealed two large cysts (12.3 mm and 93.6 mm long axis) with the left kidney and psoas. Cystic fluid showed no improvement in contrast (Figure 1a and 1b). Hydatid serology has returned positively.

During the exploration, the resection of the salient dome made it possible to find the cysts girls. With abundant irrigation of hydrogen peroxide, cystic fluid, as well as all daughter cysts and hydatid sand were drained (Figure 2a and 2b).

Then the ectocyst was dissected from the renal parenchyma. Using a ureteral catheter placed preoperatively, the injection of methylene blue made it possible to check the absence of communication with the urinary system.

During the postoperative period, the patient received albendazole.

Discussion

Hydatidosis is an anthroponosis due to the development in humans of the larval form of the dog's taenia, *Echinococcus granulosus*. It is endemic in North Africa, some countries around the Mediterranean, New Zealand, Australia, Asia, and America where it is a real public

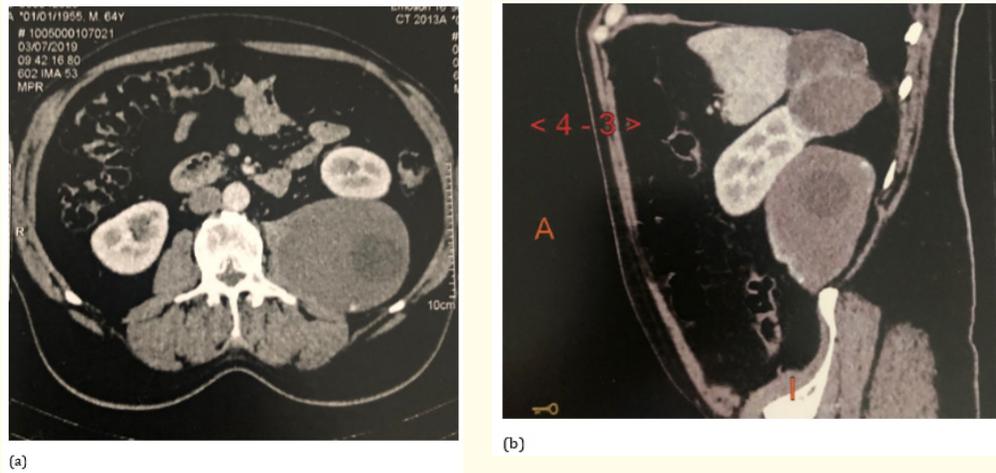


Figure 1: (a) Transverse CT scan section showing a large hydatid cyst of the psoas attached to the kidney. (b) Sagittal CT scan section showing the double localization of the hydatid cyst (left kidney and psoas).

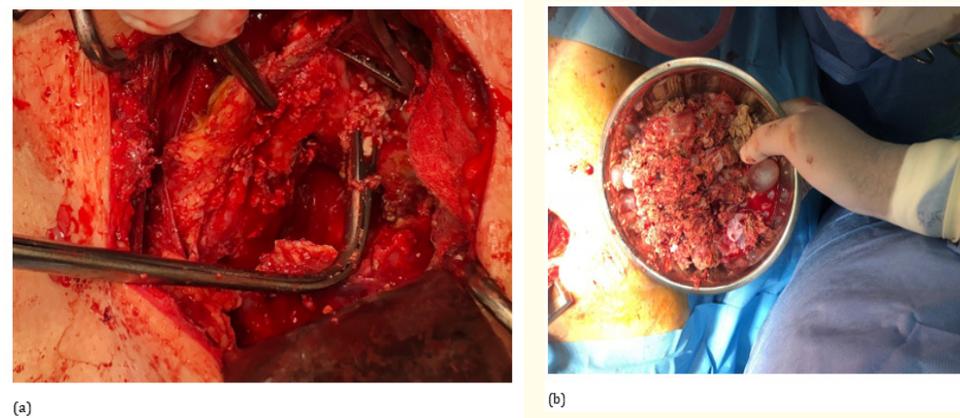


Figure 2: (a) Hydatid cyst was opened, and ectocyst was dissected from kidney parenchyma. (b) The daughter cysts were removed.

health problem. The geographical distribution of *E. granulosus* is correlated economically and culturally. Thus, the prevalence of hydatidosis is very variable. Kenya is the country with the highest prevalence (200/100 000 h/year) [2].

The Maghreb is an intermediate zone: the prevalence of hydatidosis is 8/100 000 h/year in Morocco. In Europe, hydatidosis is much rarer; it usually affects people emigrating from endemic areas [3].

Renal localization is rare: < 5% of visceral forms. The most common visceral locations are the liver 60% and the lung 30% [1].

The hydatid cyst of the kidney represents the most frequent localization of the urogenital tract. It is generally primitive, almost always unique, of cortical and preferentially polar location.

There is a slight predominance of involvement of the left kidney, without the reason being known. In 2 to 5% of cases, the hydatid cyst of the kidney is associated with other localizations, mainly liver and pulmonary.

Echinococcus granulosus is a cestode found in the small intestines of carnivores (dogs, wolves and other canines) that represent definitive hosts. The eggs are eliminated with the stool. They are ingested by a herbivore, often sheep, which represents the intermediate host. When the eggs hatch, the hexacanth embryo is released, enters the intestinal wall and passes into the portal venous circulation to the liver. In 60 to 75% of cases, it develops in the liver, while in 15 to 30% of cases it passes into the lungs via the hepatic veins.

More rarely, the embryo disseminates in another organ by blood or lymphatic system.

Ingestion of a hydatid cyst by a canine results in the release of larvae (scolex) in the intestine. At this point, scolex become adult worms. Human infestation occurs by accidental ingestion of *Echinococcus granulosus* eggs, either through the absorption of contaminated food or during contact with a dog.

It is therefore favored by promiscuity with dogs and herbivores, which explains its high prevalence in rural areas [4].

The clinical picture is not specific. Thus, the diagnosis is suspected in front of a bundle of epidemiological, clinical, biological and radiological arguments. It can remain asymptomatic for years. When it is symptomatic, the clinical manifestations depend on the rupture or not of the cyst in the excretory ways.

Low back pain is the most common symptom of closed hydatid cyst. Hematuria is only present in 10 to 30% of cases. Hematuria is secondary to caliceal cracking due to compression by the cyst as it increases in volume. The clinical examination allows to palpate a lumbar-abdominal mass in 10 to 40% of the cases. The discovery of a very large mass is not exceptional; it is explained by the often silent evolution of the hydatid cyst.

In case of rupture, the patient has a violent low back pain. The release of vesicles girls in the excretory ways can result in a true nephritic colic. In 10 to 30% of cases, there is a hydaturia which is pathognomonic of urinary hydatidosis [5].

Ultrasound directs the diagnosis of hydatid cyst in 40 to 70% of cases. In addition, it can detect other intraperitoneal localizations. The ultrasound characteristics of a hydatid cyst are: the fluid nature of its contents, the presence of parietal calcification, and sometimes the existence of a membranous detachment or vesicles. Gharbi's classification into 5 types of hepatic hydatid cyst also applies to the hydatid cyst of the kidney [6].

CT is useful in case of doubt Dg, especially for type IV and type V KHRs. CT is more sensitive than ultrasound to detect calcifications; it appreciates better the nature of the cystic contents and specifies the relations of the cyst with the organs of neighborhood. It makes it possible to detect a communication of the cyst with the excretory channels.

The CT aspect of the KHR is characteristic. It is a single or multivesicular cystic formation; its wall is well defined and can take little contrast. In the multivesicular cyst, the daughter vesicles are often detectable; their density is lower than the density of the mother cyst (rosette aspect) [7].

Biologically, there is eosinophilia in 20 to 50% of cases. This is particularly increased in case of cracking of the cyst.

Sero-immunological reactions guide the diagnosis in case of doubt. The indirect haemagglutination test is the most sensitive reaction with a sensitivity of 70%. Some false + may be related to a cross-reaction with other parasites, including bilharzia.

One study has shown that arc immunoelectrophoresis has a sensitivity and specificity of 100%. However, the results of this study, which only covered seven cases, remain to be confirmed. In practice, the serologies of hydatidosis are less and less realized because of their low reliability. They are recommended only in case of diagnostic doubt [8].

For the vast majority of authors, the reference treatment is the resection of the salient dome. Resection of the salient dome has shown its effectiveness in all types.

The addition of medical treatment is controversial. It does not seem to reduce the risk of recurrence. The operating site must be protected by fields soaked in scolicidal solution (hypertonic serum, formalin solution, hydrogen peroxide or silver nitrate) to avoid the risk of swarming.

Percutaneous therapy is a new option that some teams are proposing for Type I and Type II. Other types cannot be effectively treated percutaneously. When percutaneous treatment is decided, it is systematically associated with medical treatment.

The place of medical treatment is restricted. The effectiveness of the treatment is judged on radiological criteria. Degenerative changes were observed in 50% of cysts treated with mebendazole (Vermox®) and in 80% of cysts treated with albendazole (Zentel®).

Due to the lack of data in the literature, there is no consensus regarding the medical treatment.

It is given in combination with surgery in two situations: systematically with percutaneous treatment, or when it is a broken or recurrent cyst. Finally, medical treatment is proposed alone in cases of disseminated cysts or inoperable patients [9].

Conclusion

The hydatid cyst is the prerogative of the liver and lung. Nevertheless, it can affect any body organ except hair and nails. It is imperative to think about this during the differential diagnosis of any cystic mass found in patients in endemic areas. In the majority of cases the treatment is essentially surgical.

Source of Support

Nil.

Conflict of Interest

None declared.

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Volume 3 Issue 1 January 2020

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