

Case Report

# Hydatid Cyst of the Kidney: About Two Rare Cases

Oukkas Siham<sup>1, \*</sup>, El Mezouari El mostafa<sup>1</sup>, Redouane Rhokhsi<sup>2</sup>, Redouane Moutaj<sup>1</sup>

<sup>1</sup>Department of Parasitology Mycology, Avicenna Military Hospital, Medical School, Cadi Ayyad University, Marrakech, Morocco

<sup>2</sup>Department of Radiology, Avicenna Military Hospital, Medical School, Cadi Ayyad University, Marrakech, Morocco

Email address:

siham.oukkas@gmail.com (O. Siham)

\*Corresponding author

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**Abstract:** Hydatidosis is a rare parasitic disease that is endemic in some countries of the Mediterranean basin. Renal localization is rare and exists only in 5% of the visceral forms. The diagnosis of hydatid cyst of the kidney is suspected in epidemiological, clinical, radiological and biological arguments. The clinical symptomatology is variable, and depends on the evolutionary stage of the cyst. Hydration is the only pathognomonic sign, but it exists in only 10 to 30% of cases. Ultrasound makes it possible to suspect the hydatid nature of the lesion in more than 50% of cases; Computed tomography and magnetic resonance imaging are useful in cases of diagnostic doubt. The reference treatment of the renal hydatid cyst is Conservative surgery with resection of the protruding dome. A total nephrectomy is conceived only in front of a kidney completely destroyed.

**Keywords:** Cyst, Echinococcus Granulosus, Marrakech

## 1. Introduction

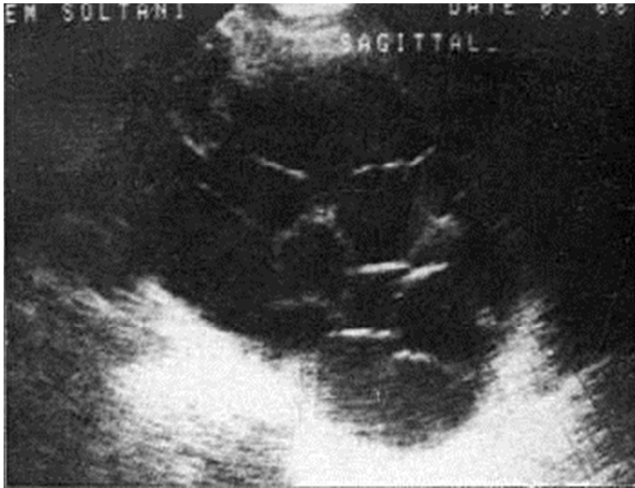
Hydatidosis is an antroponosis due to development in the larval form of the Taenia: *Echinococcus granulosus*. Like all tapeworms, the evolutionary cycle of the parasite takes place between the final host (canidae) and the intermediate host (several herbivorous or omnivorous mammals including sheep and accidentally man. The intermediate host is contaminated by ingestion of embryonated eggs (embryophores) eliminated in the external environment by the final host. The hexacanth embryo, released into the gastrointestinal tract, passes through the intestinal wall and gains, via the bloodstream, the liver and lungs. Other organs may be affected. It is stopped in 50-60% of cases by the first filter (hepatic filter), then in 30% to 40% of cases by the second filter (pulmonary filter) and is found in the rest of the body (bone, brain, Thyroid...) in 10% of the cases [1]. The ingestion of a hydatid cyst by a canine results in the release of larvae (scolex) into the intestine. At this stage, the scolex becomes adult worms. Human infestation occurs by accidental ingestion of *E. granulosus*, either by absorption of dirty foods or by contact with a dog. It is thus favored by promiscuity with dogs and herbivores, which explains its

high prevalence in rural areas, man constituting a parasitic impasse in that it is no longer usually a prey for canids. Renal localization is the 3rd place after pulmonary and hepatic localization. It is rare and represents less than 5% of the visceral forms. The most frequent visceral sites are the liver (60%) and the lung (30%). However, it threatens the functional prognosis of the kidney and even the prognosis because it exposes the risk of rupture and superinfection of the cyst. The imagery makes it possible to make the diagnosis, to appreciate the impact and to look for complications.

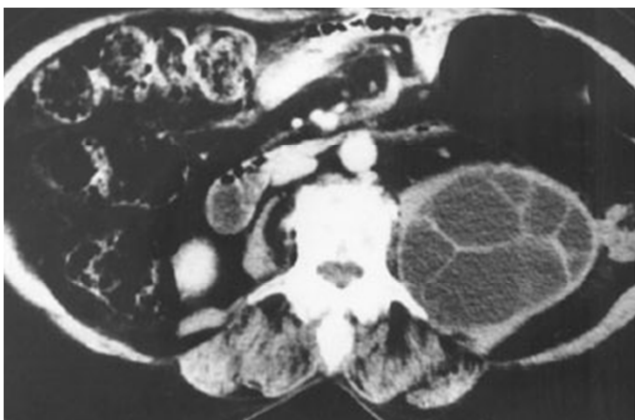
## 2. Observations

Observation 1: Man of 45 who exhibits receding left lumbar pain in analgesic treatments and in whom an ultrasound [Figure 1] completed with a CT scan showing the presence of a type III hydatid cyst has been performed [Figure 2].

Observation 2: Patient operated on a hydatid cyst of the liver 6 years ago who is suffering from the pains of the right hypochondrium posterior irradiation and in whom abdominal CT carried out has objectified the presence of a type II hydatid cyst [Figure 3].



**Figure 1.** Left renal polar cyst multicenter formation.



**Figure 2.** Hypodense lesion of left multilocular polar water density (type III).



**Figure 3.** Upper right polar renal hydatid cyst type II.

### 3. Discussions

HCK is a condition of the adult, but can be seen at all ages with a male predominance in the literature. The notion of hydatid contagion is an argument in favor of the diagnosis of presumption, reported in more than 80%. It represents the

most frequent localization of the urogenital tract. It is generally primitive, almost always unique, of cortical localization and preferentially polar. There is a slight predominance of the involvement of the left kidney, without the reason being known [2]. The medial renal location is rare and the multifocal or bilateral involvement is not exceptional [3]. Renal infestation is most often from haematogenous dissemination; It is rarely secondary to an attack by contiguity from a neighborhood organ [4]. In 40% of cases, HCK is associated with other sites, mainly hepatic and pulmonary because of its retroperitoneal development, the cyst hydatid renal is characterized by its clinical latency it can remain asymptomatic for years [2, 5]. Clinical expression is non-specific. Diagnosis is most often revealed by abdominal mass syndrome or abdominal pain syndrome [5, 6, 7, 8]. Other signs such as haematuria, urinary signs, high blood pressure and fever are not found in 29% of cases, it can be associated with nephritic colic [4, 9, 10, 11]. The discovery of HCK may be fortuitous in the assessment of the extension of a known hydatidosis. The biological assessment gives certain finesse to the diagnosis of hydatidosis, especially in case of a diagnostic problem [10, 12] and maintains a major interest in the sero-epidemiological investigations and follow-up after treatment [10, 11]. Hypereosinophilia is present in 20-50% of cases. This is particularly increased in the case of cracking of the cyst [6, 7, 8]. It is neither constant nor specific and only provides a presumptive argument; its positivity is only reported in 60% of cases HCK. The sero-immunological reactions (IR, hemagglutination, Elisa, ES) was positive in 55% of cases. The serological tests are devoid of any specificity, their positivity guides the diagnosis but their negativity does not eliminate it [1].

The indirect hemagglutination test is the most sensitive reaction with sensitivity of 70%. Some false positives may be related to cross-reactions with other parasites, such as bilharziasis. In practice, hydatidose serologies are less and less performed due to their low reliability. They are recommended only in cases of diagnostic doubt [6, 7, 8]. Currently, the diagnosis of renal hydatidosis has benefited greatly from the contribution of imaging. The ultrasound-UIV couple is largely sufficient; CT is reserved for difficult cases. As for MRI, it appears to be promising. Ultrasound is the first-line key examination, directing the diagnosis of HCK in 80% of cases, it can also detect other intra-peritoneal sites. The echographic characteristics of a hydatid cyst are: the fluid nature of its contents, the presence of parietal calcifications, and sometimes the existence of a membrane detachment or daughter vesicles presented in several ultrasound aspects according to its evolutionary stage and its anatomopathological type reproducing the natural history of the disease [6, 7, 13]. The classification of Gharbi in five types also applies to the hepatic hydatid cyst [5, 6, 7, 8]:

Type I: Pure liquid collection well limited, with reinforcement of the parietal echoes. Aspect of young univésicular cyst. This aspect can be differentiated from a serous cyst in the presence of a thick clean membrane.

Type II: Liquid collection with a detachment of the membrane which can produce a floating membrane appearance. This type is pathognomonic of the hydatid cyst.

Type III: Liquid collection partitioned with multivesicular aspect.

Type IV: Formations of heterogeneous echostructure, which can be predominantly fluid or solid.

Type V: Reflective dense image with a posterior shadow cone corresponding to a frequently sterile calcified cyst. This aspect is suggestive of diagnosis in an endemic region. However, other lesions may give the same appearance, such as kidney cancer or renal tuberculosis cave.

The diagnostic value of ultrasound for Renal Hydatid Cysts is small when these cysts are small with a size less than 2 cm; Differential diagnosis with a tumor then becomes difficult [6, 7, 8]. Similarly, the heterogeneous, hyperechogenic, well-circumscribed pseudotumoral aspect of a renal type IV cyst may evoke a renal tumor or an abscess. Echodoppler may provide an additional argument for the diagnosis of Renal Type IV Hydatid Cyst because there is no intra- and perilional vascular flow [6, 7, 8]. Intravenous urography has no contribution in the etiological diagnosis. It shows an avascular mass syndrome, with no sign of invasion of the excretory pathways, or even a silent kidney [4, 5, 13]. Calcifications in projection of the renal area are visible in more than 30% preparation. This rare sign has a strong diagnostic orientation when the calcifications are organized in peripheral arciform rim [6, 7, 8]. Besides the avascular tumor mass syndrome, it may be a distortion of the contours of the kidney, a compression, a repression or a stretch of the excretory cavities. The appearance of opacified extracalicial cavity, which is the seat of gaps (bead bag appearance), is strongly evoked [6, 7, 8]. An obstructive syndrome, secondary to the encompassment of the excretory pathway in the pericystic gangue or the migration of daughter vesicles into the ureter is observed in 5% of cases [5, 6, 10, 11]. The uro-scanner brings a lot of additional information. It is necessary whenever the diagnosis is uncertain, especially for cysts type IV and I. It makes it possible to draw up a precise topographical assessment, to look for possible extrarenal localizations. It is more sensitive than ultrasound to detect calcifications; It better evaluates the nature of the cystic content and defines the relationship of the cyst with the neighboring organs and also makes it possible to objectify any communication with the excretory pathways [6, 7, 8]. Each tomodensitometric form of HC is designated by 2 parameters: The type which corresponds to the state of the contents and the index which specifies the state of the wall [5, 10, 11]:

- type I: homogeneous univésicular cyst;
- type II: heterogeneous univesicular cyst;
- type III: multivesicular cyst;
- type IV: cyst with air inside;
- type V: fully calcified cyst.

index a: thin wall;

index b: thick wall;

index c: calcified wall;

index d: membrane separation

Magnetic resonance imaging is not common practice in

hydatid disease. It offers the possibility of obtaining multidimensional images.. The vesicular fluid is in hyposignal in T1 and hypersignal in T2 The cyst then appears hyper-intense on the sequences weighted in T2 with a peripheral halo representing the hyposignal of the perioste [6]. The treatment of HCK is essentially surgical. It should preserve as much as possible the functional renal tissue. Open surgery remains the classically practiced approach. New less invasive therapeutic techniques are based on video-assisted surgery and percutaneous surgery. The approach is dictated by two parameters: cyst measurements and these relationships with neighboring organs. In the case of an enlarged cyst with a previous development or in association with another intraperitoneal localization, the surgical approach is performed by a classic lombotomy or sometimes by an anterior incision type baraya or median or a subcostal incision in case Of diagnostic difficulty with renal cancer [5, 10, 11]. After careful protection of the operating field with hypertonic saline or hydrogen peroxide and sterilization of the cyst by intracystic injection of hypertonic saline serum, the actual treatment of the cyst. Partial pericystectomy. Or the resection of the protruding dome which is the preferred surgical method, it gives excellent results and allows a good reexpansion of the renal parenchyma. It consists in removing the exteriorized, superficial and avascular part of the perioste [1]. Of saline serum re-suction under ultrasound or CT scan used initially as a diagnostic means, currently allows non-surgical treatment of hydatid cyst [5, 10, 11]. However, the risk of spin-off or anaphylactic shock remains unpredictable.

The place of medical treatment is controversial, for most authors it is insufficient alone, its main indications are: the disseminated or multiple hydatidosis and the residual KHR after surgery. Recently, we are interested in benzimidazole derivatives:

Albendazole, mebendazole, flubendazole and praziquantel; These products appear to be active on the larval stages of *Echinococcus granulosus*, scolex and especially the protoscolex [5, 10, 11]. But the use of medical treatment long-term, clinical and biological monitoring to prove its effectiveness.

The major complication is the rupture of the cyst in the urinary tract, which can be manifested by a hydration with the risk of infection and destruction of the kidney, the other possible complications are Suppuration of the residual cavity: In some series, the postoperative suppuration rate reaches 8% and recidivism which is exceptional [5, 6, 7]. Postoperative progression is frequently favorable in the literature, except for a recurrence estimated at less than 5% of cases [5, 6, 7, 8]. The prognosis remains very good in the absence of other localizations and prophylaxis remains the best treatment in endemic areas.

## 4. Conclusion

HCK is a very rare condition. Its clinical semiology is rich, where only the hydatura is pathognomonic The

epidemiological context, the biological data and the echographic or scannographic aspect allow a preoperative diagnosis of presumption in endemic areas. The treatment is essentially surgical and conservative. The prognosis is frequently favorable but this should not make us forget that the true treatment of hydatidosis remains prophylactic for the eradication of hydatid disease.

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