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Hydatic cyst of kidney: about 20 cases experience of urology service and review of the literature

Mazdar.A, Aitsakel.A, Kallat.A, Motia.H, El Sayegh.H, Iken.A, Benslimane.l and Nouini.Y
Urology "A" University Hospital Avicenne, Rabat, Morocco.

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ABSTRACT
The hydatid cyst is a Antropo-zoonosis caused development in humans of the larval form of Echinococcusgranulosistaenia. It is endemic status in some countries where it is a real public health problem and spares no organ. Hydatid cyst of the kidney (HCK) is rare, indeed it is 2 to 3% of all visceral locations. His clinical semiology is rich but rarely specific. The diagnosis is based on arguments of strong epidemiological suspicion, clinical, biological and radiological. This condition poses therapeutic problems making it difficult to conservative surgery. The aim of this work is to remind this disease has become rare in some countries through the exposure of our results, while insisting on the importance of conservative treatment whenever it is possible. We retrospectively reviewed the records of 20 cases of HCK collected between 2006 and 2013 at the urology department "A" of the University Hospital of Rabat. These 6 men and 14 women whose average age was 37 years (18-56 years). The clinical symptomatology was dominated by low back pain (100%), with 6 cases of hydaturia.Ultrasound, performed in all patients confirmed the diagnosis in 12 patients . Abdominal CT, performed in 8 patients, was necessary whenever the diagnosis remains uncertain. The treatment consisted of 12 resection of the protruding dome, 3pericystectomy, and 5 total nephrectomies. An additional procedure was performed in the same operation (hydatid cyst in the liver in 2 cases. Postoperative course was uneventful. Regular monitoring was done for 12 patients. In light of these twentyHCK , we must insist on the importance of imaging in the diagnosis of and conservative surgical treatment.

Introduction

Hydatid cyst is aanthropozoonose due to the development in humans of the larval form ofEchinococcusgranulosistaenia [1]. It's a parasitic tapeworm that requires two hosts to complete its life cycle. Ungulates (deer, domestic cattle, domestic sheep, elk, and moose) are intermediate hosts for larval tapeworms, which form hydatid cysts in their body cavity. Canids (wolves, coyotes, dogs, foxes) are definitive hosts where larval tapeworms mature and live in the small intestine. Definitive hosts are exposed to larval tapeworms when ingesting infected ungulates. Adult tapeworms, 3-5 mm long, produce eggs which are expelled from canids in feces. Intermediate hosts ingest the eggs while grazing, where the eggs hatch and develop into larvae. Found mainly in breeding sheep, intermediate host privileged country [2]. The man is an accidental intermediate host. [1] In Morocco, it is present in endemic form constitute a real public health problem. Renal localization is rare, ranks third after hepatic and pulmonary locations and exists in 2-3 % of all hydatid locations [1, 3]. His clinical semiology is rich but rarely specific. The diagnosis is based on arguments of strong epidemiological suspicion, clinical, biological and radiological where cross-sectional imaging, particularly ultrasound and computed tomography (CT) is the key to diagnosis . [1] The aim of this work is to remind this disease has become rare in some countries through the exposure of our results, while insisting on the importance of conservative treatment whenever it is possible.

Materials and methods

We retrospectively reviewed the records of 20 patients followed at the Surgical Clinic of Urology "A" in the University Hospital Avicenne Rabat, for hydatid cyst of HCK between 2006 and 2013. Based on medical records, we collected data on clinical manifestations, results of radiology, therapeutic management and monitoring short and medium term.

Results:

Epidemiology:

The average age of our patients was 37 years (18 years and 56 years). In our series there was a female predominance (14 females / 6 males). 60% (12 cases) of our patients had a notion of contact with dogs.

Clinical symptomatology

A lumbar pain was present in 100% of cases. 6 cases were revealed by hydaturia. 4 patients had a prolonged fever. A lumbar mass was observed in 4 cases (Table 1)

Imaging (Figure 1, 2, 3, 4)

The ultrasound performed in all patients confirmed the diagnosis in 12 patients (8 HCK type II, 4 HCK type III according to the classification of Gharbi). In eight other cases, ultrasound had revealed a renal cyst formation whose exact nature has not been specified. Abdominal ultrasonography also revealed other locations (2 liversHC). The abdomen without preparation showed calcification at the renal area in 4 patients (20%).

Abdominal CT scan performed in 8 cases of doubt ultrasound confirmed the diagnosis in all cases. 4/8 patients had

Tele:
E-mail addresses: adilmazdar@gmail.com

dumb kidneys. Chest x-ray performed systematically in all patients was normal in all cases.

Biology:

Hyper eosinophilia was found in 4 cases.

Hydatid serology performed in all patients was:

- Positive in 12 cases.
- Negative in 6 cases.
- Doubtful in 2 cases.

Figure 1: Renalultrasound: hydatidcyst of kidney type III (Gharbi)

Figure 2: Renalultrasound : leftpyonephrosis due to an infected hydatid cyst

Figure 3: CT urography in the late phase: Medial right renal hydatid cyst type III (Gharbi)

Treatment and followed:

All patients were treated surgically. The middle way was performed in 2 cases for renal and hepatic localizations. For other patients, the surgical approach was a first lobotomy with retroperitoneal approach of kidney. The treatment consisted of 12 resection of the protruding dome, 3périkystectomies and 5 nephrectomies: 4 destroyed kidneys and one for renal cystic tumor classified stage IV according to the Bosniak classification. Histological analysis of the latter confirmed the hydatid nature of the cystic lesion (Figure 5).

Figure 4: CT urography transversal cut: Huge left mass with low density, corresponding to a left polar lowerhydatid cystwith membrane peeling ,excretory tract dilatation and late secretory

Figure 5: Nephrectomy for renal hydatid cyst

The antiparasitic medical treatment (3 cycles of Albendazole :10-15 mg / kg / day in cycles of 28 days, with 2 weeks off between cycles) was given in 2 cases. A drainage of the residual cavity was introduced for 48 to 72 hours. The postoperative course was uneventful in all cases. Follow-up was provided by ultrasounds performed at two months, six months, 12 months postoperatively and then every year. After a mean follow-up of six years, no recurrence was observed in 12 patients, eight others were lost to view.

Discussion:

Hydatidosis is a benign parasitosis linked to the development of the larval form of Echinococcusgranulosus, is found mainly in the contry of breeding sheep (intermediate host privileged). The man is an accidental intermediate host. [1] It is widespread in North Africa and the Mediterranean basin. Renal localization comes third after hepatic and pulmonary localization. It is estimated between 2 and 3% of visceral lesions [1,3,4]

HCK is substantially met in young adults between 30 and 50 years, but is not uncommon in children [5, 6]. There is no predominance of sex, the most frequent lesions appear on the left, and finally 80% of localizations are polar [7]. Renal hydatid disease usually presents as a single lesion (85% of cases), multifocality is estimated at 15% and bilaterality 6% [8,9]. It is found most often by a mass syndrome and / or low back pain [9, 10]. Other signs such as hematuria, urinary signs, high blood pressure and fever are not uncommon [3, 8, 10].

The hydaturia found in 6 of our patients is the only pathognomonic sign [3]. This reflects the opening of hydatid cyst in the excretory tract and exists in more than 20% of cases [4].

Table I. Presentation of clinical signs in our series

clinicalsigns	Number of cases	Percentage (%)
low back pain	20	100
Hydaturia	6	30
Prolonged fever	4	20
Lumbar mass	4	20

Currently, the diagnosis of renal hydatid disease is relatively easy thanks to the cross-sectional imaging has successfully replaced conventional radiography [11]. Indeed, hypereosinophilia exists in less than 50% of cases, skin testing of Casoni and serological testing ofGhedini-Weinberg has no specificity specificity;when they are positive they orient to the diagnosis, but their negativity has no value [1].

The ultrasound examination of choice for these suspicious renal mass has a reliability of around 80% even in case of rupture of the cyst in the urinary tract [8, 12], it has also improved the prognosis by increasing the chances to discover early the cyst [13]. The ultrasonographic aspects of HCK are identical to those originally described in the liver and grouped in the classification of Gharbi [14] reflecting the natural history of the disease (Table 2).

Table 2. GHARBI classification for hydatid cyst

Type I	Pure fluid collection
Type II	Fluid collection with a detached membrane
Type III	Fluid collection with multiple septa and/or daughtercysts
Type IV	hyperechoic with high internal echoes
Type V	Cyst with reflecting calcified thick wall

CT remains the reference radiographic examination, ultrasound without actually completing describe characteristic aspects. It is usually applied in cases doubt about the diagnosis for types I and IV cysts or complications. It can detect calcifications, determine the nature of the tumor syndrome and to distinguish between a hydatid cyst and kidney tumor by highlighting the lack of enhancement of the cyst after injection [15]. It defines the best seat of the cyst and its extension, its relationship with the urinary tract, the impact on the renal parenchyma in order to propose a conservative surgery and search hydatid other locations [16, 17]. The magnetic resonance imaging is a technique of first intention in hydatid disease. It is justified only when other imaging section does not establish a diagnosis [18].

Treatment should be as conservative as possible, hence the importance of accurate morphological preoperative assessment. The surgical approach must be extra-peritoneal, extra-pleural, except for simultaneous treatment of other sites, including liver or lung. The lombotomy is the rule, an anterior approach may be necessary in the presence of a bulky lesion [19,3].The sterilization of the parasite and the protection of the operating field are obtained by using a scolicide: formalin, hypertonic saline or hydrogen peroxide. Because of its tissue toxicity, formalin should not be used. Hypertonic saline in turn exposes a low risk of hypernatremia. The oxygenated water against a good efficiency and good tolerance [20].

The resection of the protruding is the standard treatment [4, 11] with the evacuation of vesicles Intracystic girls. However, a total pericystectomy, a partial or total nephrectomy may be indicated. [3] The treatment of the residual cavity depends on its ability to sag and to fill without the risk of suppuration. A reconciliation of its banks can be realized. Drainage of perirenal is required in all cases [3,11].

Medical treatment with albendazole (10-15 mg / kg / day in cycles of 28 days, with 2 weeks off between cycles, 3 cycles usually sufficient), with non-negligible especially hematologic and hepatic toxicity (20% of case), is insufficiently healing alone. [21] Albendazole may, however, be an alternative treatment in cases of inoperable hydatid disease, or framing a prophylactic surgery to prevent recurrence [4, 22]

Conclusion:

The HCK is a rare parasitic disease in non-endemic areas. Clinically silent for a long time, it becomes symptomatic that during its complications, compression or fistula .Generally, ultrasound sufficient for diagnosis. CT has a place in second intention in the case of renal hydatid cyst complicated and in situations where the diagnosis is uncertain, particularly for hydatid cysts type I and IV of Gharbi classification. Renal hydatid cyst is a benign disease that is a biological error in humans and justifies a simple treatment that is in this case the resection of the protruding.

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