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Inflammation and infection

Multiple unusual urological locations of hydatic cysts including kidney, retrovesical and spermatic cord. A new case report

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A B S T R A C T

Human hydatidosis is endemic in regions with temperate climate where pastoral farming is common.

It is frequent in the southern shore of the Mediterranean, particularly in the Maghreb countries. It remains asymptomatic for long period, and the diagnosis is often delayed. The most affected organs are the liver and lungs. Hydatic disease of the urinary tract is an unusual entity.

Our case concerns multiple unusual locations of hydatic disease in the urinary tract, including renal, retrovesical and spermatic cord, associated with splenic and intraperitoneal locations. Coexistence of hydatic cysts in such locations of urinary tract has not been previously reported.

Introduction

Hydatidosis is a cosmopolitan anthropozoonosis caused by the larval form of taenia echinococcus (E echinococcus granulosis), living in the gut of the dogs and wild canines. It is endemic in some Mediterranean countries and it can affect any organ in the human body. Urinary tract location of hydatidosis is uncommon and rarely isolated. Multiple locations often pose a problem of differential diagnosis. Surgery is the mainstay of treatment.

Observation

A 29-year-old man, a farmer living in a rural zone in the central part of Tunisia, with prolonged contact with domestic dogs, has presented right lumbar pain evolving for 1 year. He also complained of dysuria, a single episode of total hematuria and hydaturia that occurred 1 year ago. The patient had no significant medical history.

Clinical examination revealed splenomegaly, and right lumbar contact. There was no costovertebral angle tenderness. Abdominal examination was normal, with no palpable abdominal mass. The examination of the external genitalia noted a unique left testicle. The patient was not icteric, and had no allergic manifestations.

Renal function was normal. The blood count was normal, without hyper-eosinophilia. The hydatid serology (ELISA) was positive.

A plain film of urinary tract showed calcifications projecting on bladder area. The chest X-ray was normal.

Abdominal ultrasonography revealed cystic lesions in the right kidney, spleen, in retrovesical area and peritoneum, type II and III according to the classification of Gharbi.

An abdominal computed tomography scan (CT) revealed multiple cystic images, some with calcified wall, located in the right kidney, retrovesical fat, spleen and intra-abdominal position adherent to intestinal loops sparing the liver (Figs. 1 and 2).

A renal scintigraphy with dimercaptosuccinic acid (DMSA) showed a right kidney that functioned at 5%, with a heterogeneous appearance and hypo-fixation at the medullary level.

Surgical treatment was performed after 15 days of oral administration of Albendazole 400 mg/day: Splenectomy, right total nephrectomy, pericystectomy of the intraabdominal hydatid cyst, resection of the prominent dome of the retrovesical cyst and total cystopericystectomy of an hydatid cyst located at a left vas deferens discovered intraoperatively. Moreover, a right intra-abdominal testicle was discovered intraoperatively, with an involute appearance, which led to an orchiectomy.

The diagnosis of hydatid origin was confirmed by anatomopathological examination of the operative specimens (Fig. 3). The histological examination of the intra-abdominal testicle showed a parenchyma of involute appearance.

The postoperative course was uneventful. Albendazole was not prescribed postoperatively. During an eight years regular follow-up, the patient presented an excretory azoospermia in the post-operative first year, and no hydatid recurrence was detected.

Discussion

Echinococcal disease of the urinary tract is an unusual entity, even

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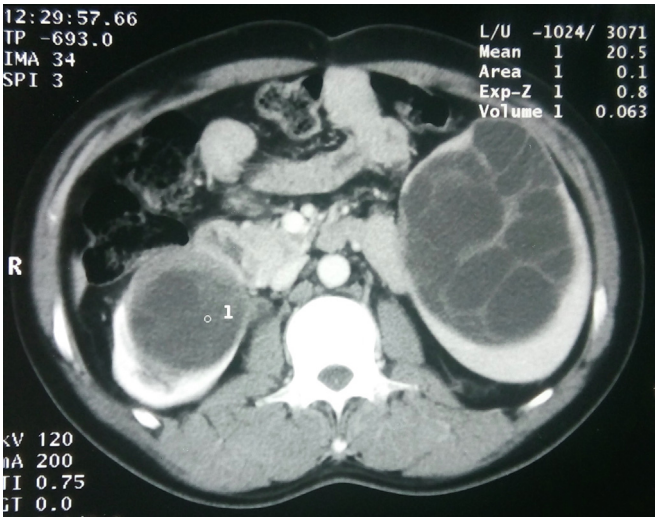

Fig. 1. CT: splenic hydatid cyst type III and a right renal hydatid cyst type II of Gharbi classification.

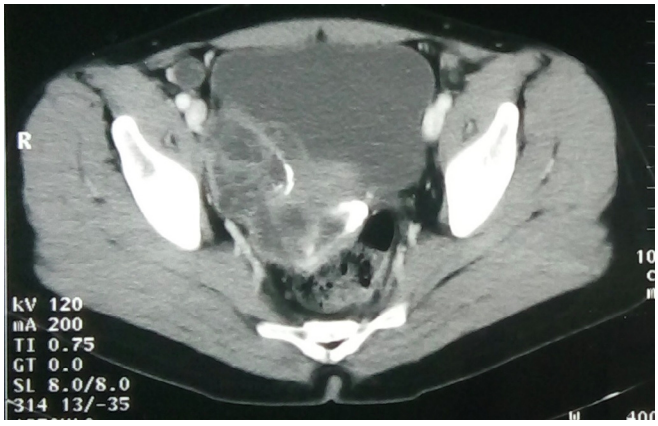

Fig. 2. CT: Retrovesical hydatid cyst Type III of Gharbi, pushing the posterolateral right side of the bladder.

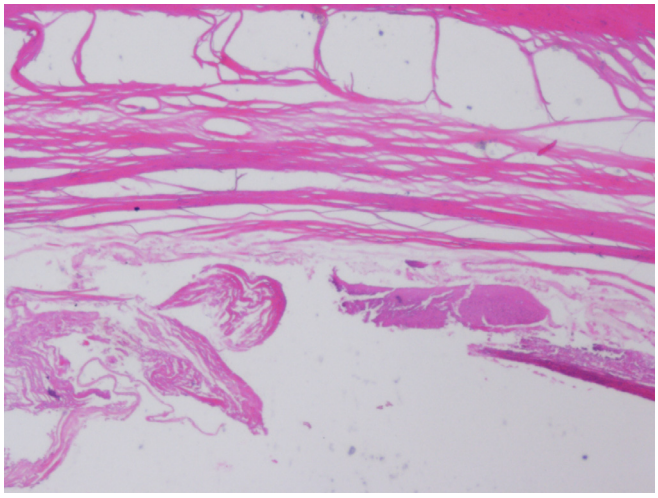

Fig. 3. Optical microscope (HE x 40): Thin laminated anhistic layer with eosinophilic appearance, PAS positive and contained scolex in the cyst's light.

in endemic countries. It accounts for 2–4% of cases. It is often associated with other hydatid locations. It is even rarer to see multiple locations in the urogenital tract.[1]

Renal location is the most common site of the urinary tract, but it remains rare, sitting in third position of visceral involvement.[1] The clinical evolution is often silent and lacks specificity.

Lumbar pain is the most frequent symptom. Fever, lumbar mass and hematuria may be also observed.[2] Hydaturia, the only pathognomonic sign, is found in 13% of cases.[2] Ultrasound and CT are the key of the diagnosis.

Surgery is the main stay of treatment. It must be as conservative as possible. Lombotomy allows an extraperitoneal approach avoiding the risk of swarming of the peritoneal cavity. The transperitoneal middle laparotomy is indicated in case of other associated locations.[2]

The retrovesical location of hydatid cyst is rare. It accounts for only 0.5–1% of visceral locations and 2% of urological hydatid cysts. It is defined by the development of the parasite in subvesical and retrovesical fat.

Clinical signs are usually late onset and are dominated by palpation of a retropubic mass and compressive manifestations, such as signs of bladder irritation or transit disorders.[3]

The diagnosis is mainly based on ultrasound. A CT scan is of a great contribution in case of small cysts, or to detect other locations, or to pinpoint the exact diagnosis in case of pseudotumoral cyst.[3] The surgical approach must be extraperitoneal, minimizing the risk of hydatid dissemination and secondary suppurations as well as postoperative occlusions.[3] However, in case of diagnostic doubt or coexistent cysts elsewhere, a middle laparotomy is recommended. Total cystopericystectomy is to choose whenever possible, otherwise it will be partial resecting most of the periocystium sparing the plates in contact with dangerous areas such as the ureters, the vessels or the digestive tract.[3]

The spermatic cord is an uncommon site for the hydatic disease. The first case was described in 1951 by Chandra and Dutt.[4]

The physical examination can be normal. Sometimes, palpation can find a scrotal or inguinal mobile and painless mass, sometimes confused with different etiologies of scrotal or inguinal tumefaction, mainly inguinal hernia, encysted hydrocele and simple cysts of the spermatic cord.[4,5]

Ultrasonographic diagnosis may not be evident, especially for hydatic cysts type I, sometimes taken for a single cyst of the spermatic cord or a hydrocele. Hydatic cyst type IV is a pseudo-tumoral lesion, it may confuse with tumors of the spermatic cord.[4,5]

The treatment is surgical. It must be conservative, preserving the testicular blood supply and a functional vas deferens. In absence of adhesions with the noble elements (spermatic vessels, vas deferens), the cysto-pericystectomy must be total.

Conclusion

Hydatidosis of the urogenital tract is rare, and even more so in multiple locations, even in highly endemic countries. The diagnosis, sometimes unclear, is based on imaging. The treatment remains mainly surgical. Prevention and early diagnosis remain the key to reduce the high incidence and morbidity of this disease.

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