Inflammation and infection

Renal Echinococciosis mistaken for a cystic renal tumor: A case report

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ABSTRACT

Renal Echinococciosis is a rare medical entity (2–4%). The preoperative clinical, biological and radiological diagnosis is quite challenging. We report herein the case of a 63 year-old female patient, operated for a suspicious renal cystic mass that resulted full of grape-like cysts intraoperatively.

Introduction

Echinococcosis is a zoonotic disease caused by infection with the tapeworm Echinococcus. Humans are accidental intermediate dead end hosts infected through ingestion of parasite eggs in contaminated food or through direct contact with animal hosts. Entering the duodenal mucosa, the parasite larva reaches the blood stream and seeds the liver (75%), lungs (15%) or other sites (heart, CNS, kidney (extremely rare: 1–5%), bone, ocular, subcutaneous …). 1

As for renal involvement, most patients remain asymptomatic for years. Hydatiduria (in only 10% of cases), or presence of daughter vesicles in the urine, is the only pathognomonic symptom. 1

Treatment is often surgical, consisting of nephron-sparing nephrectomy.

Case report

A 63-year-old female farmer, admitted to the hospital for cardiac problems, reported a 20-year-history of intermittent stone passage in urine along with gross hematuria, several episodes of ‘inability to urinate relieved by stone passage’ and nausea. Physical examination was remarkable for lung crackles and suprapubic tenderness.

Her complete blood count showed: leukocyte count 8730/cm³ (59.9% neutrophils, 1.35% eosinophils) and hemoglobin 15 g/dL. Renal function blood tests were normal. Urinalysis showed numerous RBCs. She mentioned having had an abdomino-pelvic ultrasound, done 6 years earlier elsewhere for the above-mentioned symptoms, showing ‘a mass in the left kidney’, but she failed to bring the films or the report. Accordingly, an enhanced CAT scan of the urinary tract was done. It demonstrated a hypoattenuating, left-sided exophytic, multicystic (thick enhancing septae), and well-demarcated renal mass (upper pole), measuring 7*5.3*6.4 cm (Fig. 1). No liver lesions were seen. The radiologist classified the lesion as a Bosniak III cystic mass. CXR showed no lung lesions.

Urology team was consulted and a surgical excision (partial nephrectomy) was planned and performed two weeks later, after cardiopulmonary clearance.

Intervention: With the patient in right lateral decubitus, a left lateral-posterior (retroperitoneal) incision was done; dissection followed and left renal mass identified. Upon resection, jelly-like material and dozens of differently-sized cysts (Fig. 2) were delivered out of the mass. Profuse irrigation of the surgical field with Cetrimide was performed (around and inside the kidney). Specimens (Fig. 2) were submitted to pathology.

Postoperative period was uneventful. Hydatid serology turned to be borderline (titer = 1/160). The patient was put on 15 mg/kg of Albendazole PO daily (divided into two doses) for 1 month. The histopathological examination of the specimen confirmed hydatid disease (scolices), chronic fibro-inflammatory changes of the renal parenchyma and no signs of malignancy (Fig. 3).

On follow-up appointment, the patient had her urinary symptoms resolved. Renal ultrasound at 6 months showed normal findings, with no evidence of cyst reappearance.

Discussion

Our patient was a farmer which justifies her susceptibility. Renal hydatidosis is a silent disease, but her long-standing symptoms imply negligence.

Ultrasound is the most essential tool for diagnosis of hydatid disease.

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Floating membranes, daughter cysts, and hydatid sand are thus seen in pure cystic lesions. Computed Axial Tomogram is more sensitive in observing daughter cysts, minute calcifications, intracystic gas, and determining the anatomical localization preoperatively. A diagnostic pitfall is misinterpretation of the entity as a renal cystic tumor.

Despite being a benign disease, renal echinococcosis may get complicated whenever vascular compression, bleeding, superinfection, ureteral obstruction ... occur.

Treatment modalities include:

1. Surgery (open or laparoscopic): enucleation, marsupialization, cystectomy, partial or total nephrectomy, depending on the cyst location, size, and feasibility of renal preserving surgery. The transperitoneal approach is preferred (vs retroperitoneal) since it offers a larger operating space; however it risks disease dissemination into the peritoneal cavity. To avoid dissemination and anaphylaxis, oral anti-helminthic agents are used before surgery in order to sterilize the cyst contents, the surgical field is packed with Cetriramide-irrigated-gauzes, the cyst is drained in a closed fashion and scolicidal agents are instilled, and all the parasitic material have to be removed. Adjunctive drug therapy should be initiated at least 4 days prior to surgery and should be continued for at least 1 month (Albendazole) or 3 months (Mebendazole) following surgery.

2. Percutaneous treatment: PAIR (puncture, aspiration, injection, and re-aspiration of scolicidal solutions) or modified catheterization for cysts larger than 6 cm. Adjunctive anti-helminthic therapy should be administered before and after the procedure;

3. Drug therapy alone (without interruption for up to six months) is appropriate for a single compartment cyst <5 cm in size, but may elicit adverse events such as liver toxicity, leukopenia, allergic reactions, and alopecia. It also might not be as efficacious. Albendazole (two daily doses adding up to 10–15 mg/k/kg/day) is the antiparasitic agent of choice. This alternative might be helpful in patients not fit for surgical or percutaneous treatment, and allows sparing of the affected kidney (being a precious organ).

In our case, surgery was decided in the light of malignancy suspicion. Upon retrieval of cysts, the field was packed with gauzes and irrigated with Cetriramide immediately (calyces too). All affected tissue and cysts were removed. Albendazole was initiated postoperatively prior to pathology results.
Conclusion

Finally, there remains one question: was the patient complaining of hydatiduria or lithuria? Given her noncompliance and her poor history-giving capability, we were unable to see these “stones” nor to answer this very question.

Authors contribution

Georges Nassar: Critical revision of the work for important intellectual content, substantial contribution on writing the manuscript and the conceptualization of the concept, final approval of the manuscript to be published.

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