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Case report

Isolated renal hydatid cyst

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ABSTRACT

Introduction and importance: Hydatid disease, is a parasitic disease caused by the larval stage of the cestode Echinococcus granulosus. The Liver and lungs are the commonly affected organs but rarely kidney can be affected. Patient with primary renal hydatid may present with nonspecific symptoms or may be diagnosed incidentally. Imaging and serology are useful for diagnosis. The best therapy is surgery.

Case presentation: This case is reported to discuss a 35-year-old female presented with complaints of left side flank pain and swelling. The abdominal US and CECT show renal cyst, which was nonspecific. She underwent an open surgical exploration and cystectomy plus partial pericystectomy done. Post-operative serology test show Echinococcus IgG positive. Postoperatively, the patient had an uneventful recovery and discharged with Albendazole therapy for 8 weeks.

Clinical discussion: Renal hydatid cyst is rare, accounting for less than 2 to 3 % of all hydatid disease. Renal hydatid cysts can remain asymptomatic for many years and then can be discovered incidentally. The diagnosis and staging of renal hydatid cysts rely heavily on imaging and serology. Hydatid disease is primarily treated surgically.

Conclusion: A high index of suspicion should be maintained, especially in endemic areas, to ensure timely and accurate diagnosis of renal hydatid cyst. Surgical excision remains the treatment of choice, with appropriate preoperative and postoperative anthelminthic therapy. Long-term follow-up is crucial to monitor for recurrence and associated complications.

1. Introduction

Hydatid disease, also known as Echinococcosis, is a zoonotic parasitic disease brought on by the larval stage of the cestode Echinococcus granulosus [1]. The presence of hydatid cysts in humans, which may stay for a long time without showing any symptoms, is what defines hydatid disease [2]. The disease is widespread in regions of the world where animal husbandry is prevalent, including India, the southern United States, the Middle East, the Mediterranean region of Australia, and New Zealand [3]. The liver and lungs are where cysts are most frequently found (75 % and 15 %, respectively) [4]. Renal involvement in cystic echinococcosis is rare, accounting for less than 2 to 3 % of all cases [5].

The majority of people with primary kidney involvement go years without experiencing any symptoms. Those who do experience symptoms, the symptoms are nonspecific such as back pain and upper abdominal pain [6]. Because simple aspiration is linked to extremely high recurrence rates (90 %), the best therapy is surgery [7].

This case is reported on accordance with SCARE criteria [8].

2. Case presentation

A 35-year-old female presented to the urology outpatient department with complaints of left side flank pain and gradually increasing abdominal swelling for the last 15 months which worsened over the past 3 months. The pain was dull aching in type and non-radiating, it was associated with early satiety in later course of illness. She was seven months pregnant at the time of the initial symptoms and the renal mass was seen during obstetric ultrasound evaluation. The patient differed any treatment during pregnancy. Physical examination revealed fullness

Abbreviations: CECT, Contrast-enhanced computed tomography; IgG, Immunoglobulin G; ELISA, Enzyme linked immunosorbent assay; US, Ultrasound.

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over left flank area with roughly 7 × 8 cm measuring smooth surface having nontender palpable mass over the left lower quadrant area, which crosses the umbilicus up to left supra-iliac region. She used to live in rural area and had contact history with animals like dogs and sheep but now she doesn't live in rural area any longer and no recent contact with domestic animals.

Laboratory investigations, including complete blood count, renal function tests, urine analysis and serum electrolytes were within the normal range. To further evaluate the patient's symptoms, an abdominal ultrasound was performed, showing a well-defined large anechoic lesion measuring approximately 13.5 cm by 10 cm with posterior enhancement in the lower pole of the left kidney (Fig. 1).The conclusion of the ultrasound was left large renal cyst.

A contrast-enhanced computed tomography (CT) scan of the abdomen and pelvis confirmed the presence of an uniloculated cystic lesion around the left lower pole of the kidney, but it was difficult to distinguish it from pancreatic pseudo cyst and renal cyst (Fig. 2).

Based on the radiological findings and clinical suspicion of a renal cyst and pancreatic pseudo cyst, surgical intervention was planned. Due to the large size of the cyst and symptomatic complaints, surgical intervention was deemed necessary. The patient underwent an open surgical exploration. The intraoperative finding was a huge intra-abdominal cystic mass occupying most of the abdomen it arises from lower pole of the kidney (Fig. 3). The cyst meticulously released from adherent structure and the cyst was carefully inoculated from the pericyst in its intact form. The pericyst was marcupulised and a drain was left. So our post-operative diagnosis was hydatid cyst by watching physical appearance of the cyst. In immediate post-operative day, we sent serology test (ELISA, Enzyme linked immunosorbent assay) and result was Echinococcus IgG positive.

Postoperatively, the patient had an uneventful recovery. The patient was discharged on the 5th postoperative day. She received Albendazole therapy for 8 weeks to minimize the risk of recurrence and associated complications. Regular follow-up and surveillance imaging were planned to monitor any residual or recurrent disease at six months, one year, and two years.

3. Discussion

Hydatid cyst is an important health problem in the world, especially in endemic regions. It is widespread in more than 5 to 10 % in parts of Argentina, Peru, East Africa, Central Asia and China [9]. Renal involvement in cystic echinococcosis is rare, accounting for less than 2 to 3 % of all cases [5]. Due to the lack of particular symptoms or indicators, renal hydatid is a disease that is difficult to identify and is uncommon compared to liver and lung hydatid cysts. The most frequent symptoms include a palpable lump, flank pain, hematuria, and the passage of pearly structures in the urine, malaise, and fever [4]. Renal

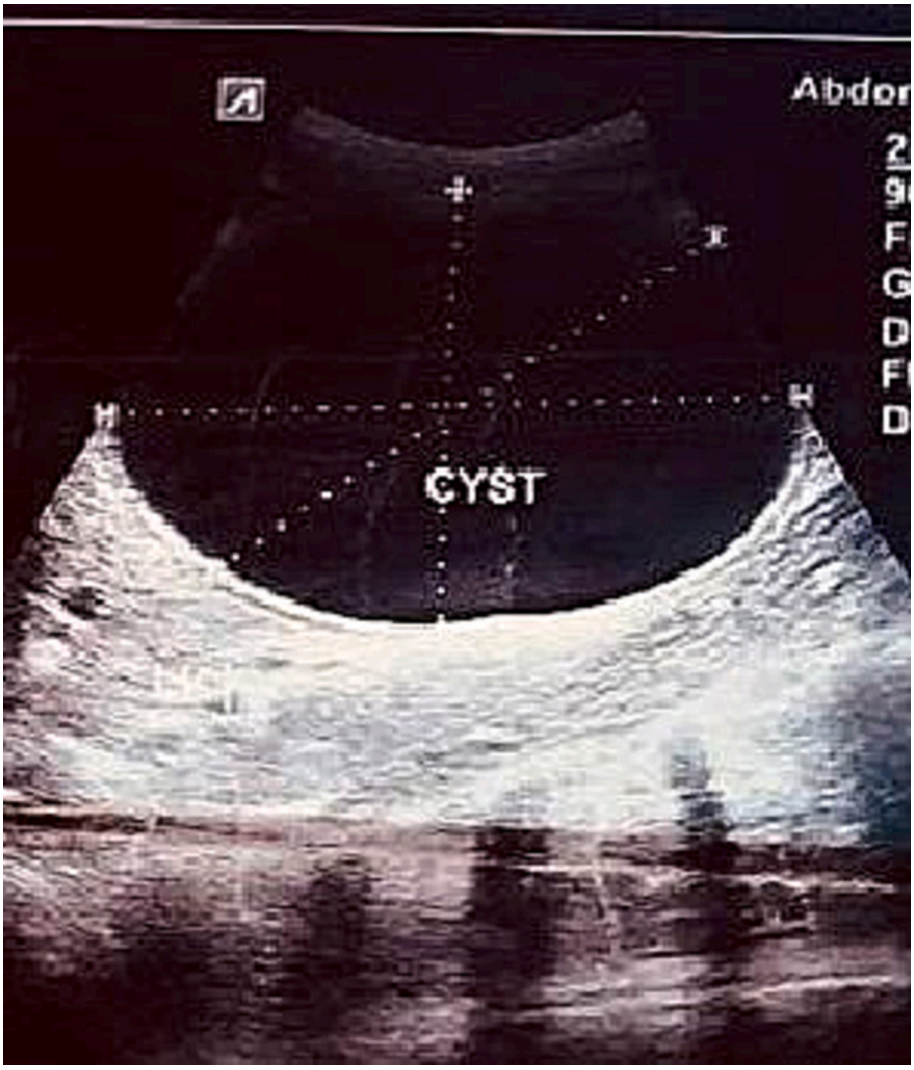

Fig. 1. Ultrasound finding showing well-defined large anechoic lesion.

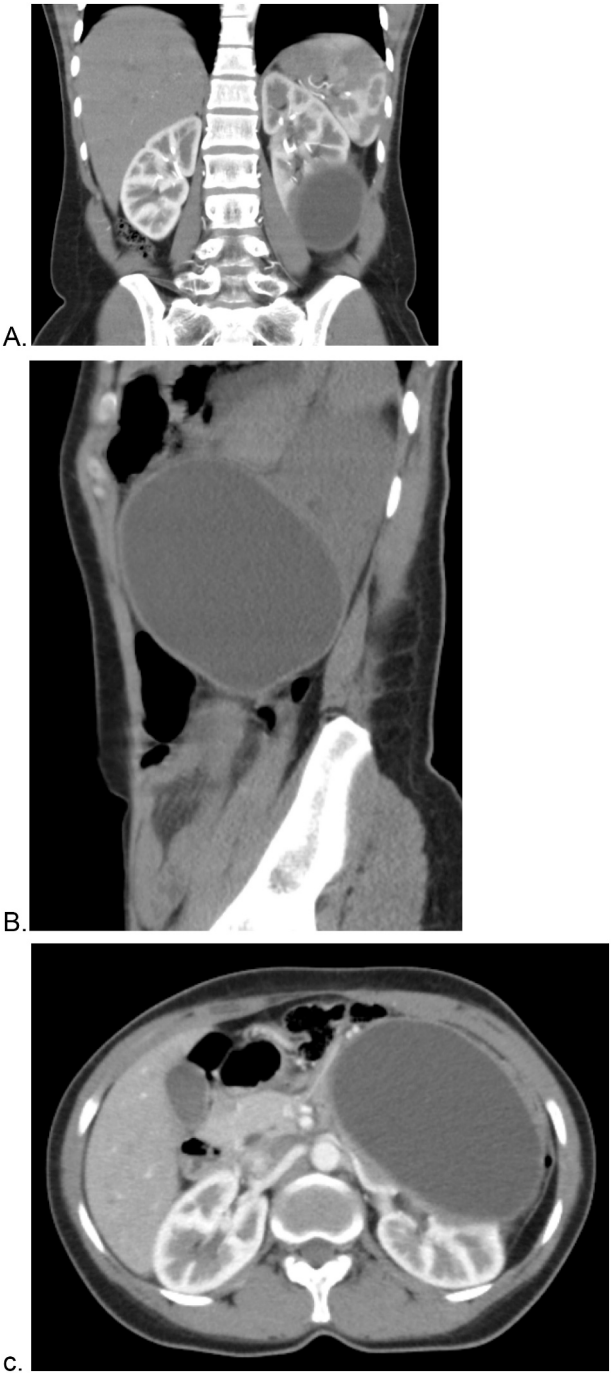

Fig. 2. CT with contrast showed a uniloculated cystic lesion in the left lower pole kidney
A) Coronal cortico-medullary phase CT B) Sagittal pre-contrast CT C) Cortico-medullary phase, axial CT.

hydatid cysts can remain asymptomatic for many years and then can be discovered incidentally [10].

In our case, the patient presented with left side flank pain and abdominal palpable mass, which is typical for renal hydatid cysts.

The diagnosis and staging of renal hydatid cysts rely heavily on imaging. The most important diagnostic technique for hydatid illness is ultrasound, which can show floating membranes, daughter cysts, and hydatid sand in pure cystic lesions. In comparison to other imaging modalities, computed tomography is better at detecting daughter cysts, tiny calcifications, intracystic gas, and anatomical localization before surgery [1].

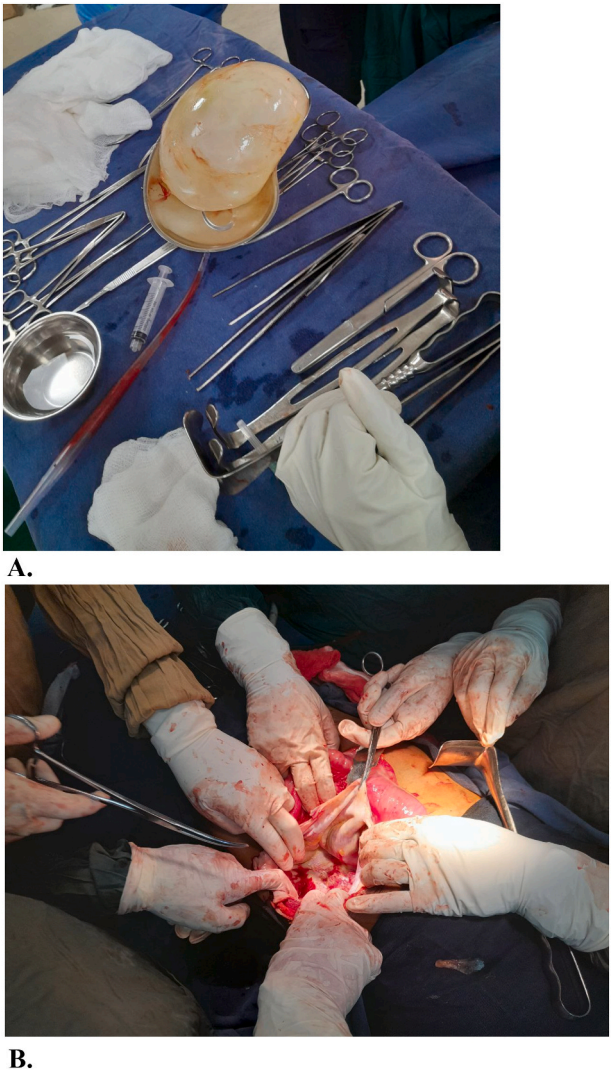

Fig. 3. Intraoperative findings showing. A. The hydatid cyst surgical specimen B. The pericyst as seen intraoperatively.

Serology is useful in the diagnosis of hydatid disease. However, the sensitivity of serological tests is affected by the site and condition of hydatid cysts in the body [11]. No standard serologic test is available for detection of cystic Echinococcosis antibody. But indirect hemagglutination test and ELISA are the most common used anti – Echinococcosis Antibody test [12]. ELISA appears to be the most sensitive and specific available assay [13]. Newer commercial Echinococcal IgG assay has more than 95.2 % and 94.3 % sensitivity and specificity, respectively [14]. A study done by El-Shazly AM et al. compares the sensitivity and specificity of indirect hemagglutination and the ELISA technique and shows that ELISA has 96.7 % and 97.5 % sensitivity and specificity respectively,while indirect hemagglutination has 86.7 % sensitivity and 95 % specificity [15].

Hydatid disease is primarily treated surgically with the goal of controlling the cyst and any leftover cavity [16]. Depending on cyst size and extent of tissue damage, renal hydatid cyst management range from simple cyst excision to nephrectomy [5]. When possible, kidney sparing cyst removal is performed through cystectomy and pericystectomy; however, nephrectomy is needed when the hydatid cyst invades a major renal part or in cases of hydatiduria. Drug therapy for renal hydatid disease is safe but ineffective. Therefore, surgery has been considered the treatment of choice. Albendazole is prescribed as a prophylactic drug at a dosage of 10-15 mg/kg/day (maximum of 400 mg) orally before and

after surgery [10]. In our case cystectomy plus partial pericystectomy is done for the patient.

4. Conclusion

Renal hydatid cyst is a rare entities that can present with diverse symptoms and mimic other renal masses. A high index of suspicion should be maintained, especially in endemic areas, to ensure timely and accurate diagnosis. Surgical excision remains the treatment of choice, with appropriate preoperative and postoperative anthelminthic therapy. Long-term follow-up is crucial to monitor for recurrence and associated complications. This case report emphasizes the importance of a multidisciplinary approach involving urologist, radiologist and infectious disease specialist to manage renal hydatid cyst effectively.

Patient (parent's) consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Ethical approval

Ethical approval was provided by the author's institution.

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Author contribution

1. Sadam Aliye Mohammed:MD, Urology resident: Conceived, wrote, and submitted the report. Involved in the diagnosis, management and follow up of the patient.
2. Mezgeb Gedefe Molla: MD, Senior Urologist: Operated on the patient. Involved in the writing of the report and in the follow up of the patient
3. Fitsum Solomon Bekele, MD (Assistant professor of urology): Operated on the patient. Reviewed the case report.
4. Hayat Seid Endris, Medical Intern: Involved in writing the case report, and inpatient follow up of the patient.

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Declaration of competing interest

All authors declare that they have no conflict of interest.

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