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Case Report

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Isolated renal hydatid cyst presenting as haematuria in a 35-year-old Female: A Case Report

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Abstract

Hydatid disease, caused by Echinococcus granulosus, is a parasitic infection that primarily affects the liver and lungs, with renal involvement being rare. This case report describes a 35-year-old female who presented with right flank pain and occasional hematuria. The patient had a history of close contact with a pet dog. Imaging studies, including ultrasound and computed tomography (CT), revealed an 8 cm hydatid cyst in the right kidney. Serological testing confirmed the diagnosis of renal hydatid disease. The patient underwent preoperative albendazole therapy followed by partial nephrectomy. The postoperative course was uneventful, and the patient showed no recurrence at three months follow-up. Renal hydatid disease, although uncommon, should be considered in patients from endemic areas or with relevant risk factors. Early diagnosis through imaging and serological tests, followed by a combination of medical and surgical management, can lead to successful outcomes. This case highlights the importance of considering hydatid disease in the differential diagnosis of renal cystic masses in appropriate clinical settings.

Keywords:- Renal Hydatid Cyst, Echinococcosis, Nephrectomy, Albendazole Therapy

INTRODUCTION

Hydatid disease, also known as echinococcosis, is a parasitic infection caused by the larval stage of Echinococcus granulosus and, less commonly, Echinococcus multilocularis.[1] It is primarily a zoonotic disease that involves the liver and lungs, but less frequently affects other organs, including the kidneys.

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Renal involvement is rare, accounting for approximately 2–4% of all cases of hydatid disease. When the kidneys are involved, the clinical manifestations can range from asymptomatic cases to severe complications such as renal failure or rupture of the cyst. Hydatid cysts in the kidney can grow slowly and remain silent for years before symptoms arise, posing a significant diagnostic challenge.[2]

Clinic Epidemiologically, hydatid disease is endemic in certain parts of the world, particularly in regions where livestock farming and domestic dogs are common, such as South America, Eastern Europe, the Middle East, and Africa. Transmission occurs when humans inadvertently ingest eggs of the parasite, typically through contact with infected dogs or consumption of contaminated food and water. After ingestion, the eggs hatch and release larvae that can travel to various organs, forming cysts. The kidneys, though a rare site, can become involved through hematogenous spread.[3]

Clinically, patients with renal hydatid disease may present with non-specific symptoms, including flank pain, hematuria, or palpable abdominal masses. In some cases, hydatiduria, which involves the rupture of the cyst into the urinary tract, can occur, presenting as the passage of parasitic material in urine. Diagnosis is often made using imaging techniques such as ultrasound (USG) or computed tomography (CT) scans, which reveal the characteristic cystic lesions. Serological tests, such as enzyme-linked immunosorbent assay (ELISA), can support the diagnosis but may not always be definitive, especially in isolated renal hydatid disease where antibody levels can be low.[4]

A noteworthy finding in renal hydatid cysts is the presence of daughter cysts or a multi-septated appearance on imaging, which can help differentiate hydatid cysts from other cystic renal pathologies.[5] The case we present here illustrates a rare presentation of a right renal hydatid cyst in a patient with a personal history of close contact with a domestic dog, an important risk factor for echinococcal infection.

CASE REPORT

A 35-year-old female, residing in an urban area and with no significant past medical history, presented to the outpatient clinic with complaints of intermittent right flank pain for the past six months. The pain was described as dull and aching in nature, with no radiation to other areas. The patient also reported occasional episodes of haematuria. She denied any recent history of urinary tract infections, fever, or weight loss. A personal history of owning a pet dog, which had not been dewormed regularly, was noted during the medical interview.

On physical examination, the patient appeared well, with normal vital signs. Abdominal examination revealed mild tenderness in the right flank, but no palpable masses were noted. Initial laboratory investigations, including complete blood count and renal function tests, were within normal limits. Urinalysis confirmed the presence of microscopic hematuria but no proteinuria or pyuria.

Given the clinical presentation, an ultrasound of the abdomen and pelvis was performed, revealing a well-defined cystic mass in the right kidney, measuring 8 cm in diameter. The cyst showed internal septations and the presence of daughter cysts, suggestive of a hydatid cyst. A subsequent contrast-enhanced CT scan of the abdomen confirmed the findings, showing a large hydatid cyst occupying the Midpole of the right kidney without evidence of rupture or involvement of surrounding structures.

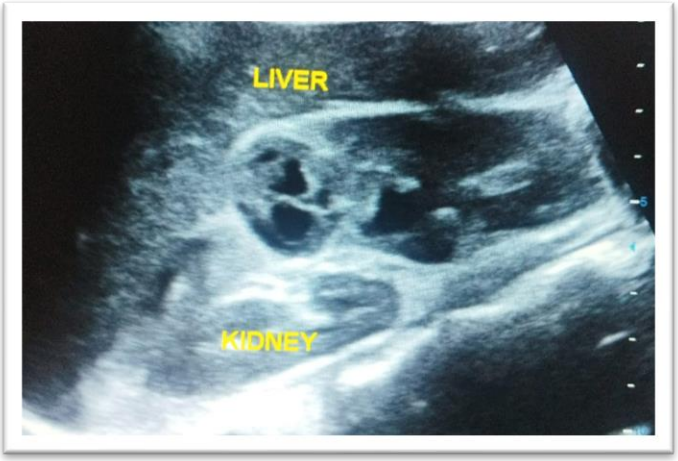

Figure 1:- well-defined cystic mass in Midpole of right kidney with septations s/o renal hydatid cyst.

Serological testing for echinococcal antibodies was positive, further supporting the diagnosis. Based on the imaging and serological findings, a diagnosis of renal hydatid disease was made. The patient was referred to the urology and infectious disease teams for further management.

The management plan included preoperative albendazole therapy to reduce the risk of cyst rupture and prevent dissemination. After four weeks of medical therapy, the patient underwent partial nephrectomy with enucleation of the cyst. Intraoperatively, the cyst was carefully isolated, and there was no spillage of cyst contents. The patient's postoperative course was uneventful, and she was discharged home on postoperative day five. Albendazole therapy was continued for six weeks postoperatively to prevent recurrence.

On follow-up at three months, the patient remained asymptomatic, and repeat imaging showed no evidence of residual or recurrent disease.

Complete Blood Count (CBC)	Within normal limits	—
Serum Creatinine	0.9 mg/dL	0.6–1.2 mg/dL
Urinalysis	Microscopic hematuria	—
Echinococcal Serology (ELISA)	Positive	----

Table 1 :- Laboratory investigations in studied case.

Discussion

Hydatid disease involving the kidney is an uncommon manifestation, and its diagnosis can be delayed due to its non-specific clinical presentation. In this case, the patient presented with right flank pain and occasional haematuria, both of which are relatively common symptoms in renal pathologies, but the presence of a hydatid cyst is rare and should be considered in endemic areas or in patients with risk factors such as exposure to dogs.[6]

In a review of published literature, several similar cases have been reported, underscoring the importance of imaging in diagnosing renal hydatid disease.[6] For instance, a case series published by Rexati M et al described 30 cases of renal hydatid disease in China where hydatid cysts were diagnosed using ultrasound and CT imaging, similar to our case.[7] Another case report byMisra Aet al highlighted a patient with a large hydatid cyst of the kidney that was successfully treated with partial nephrectomy and albendazole mirroring the management approach in our case.[8]

A key discussion point in renal hydatid cysts is the management strategy. Surgical intervention, such as partial or total nephrectomy, remains the treatment of choice in most cases. However, preoperative medical therapy with albendazole plays a crucial role in sterilizing the cyst and preventing intraoperative spillage, which can lead to secondary echinococcosis. Postoperative albendazole is also recommended to reduce the risk of recurrence, particularly in cases where complete excision of the cyst is not feasible.[9]

In terms of prognosis, patients with isolated renal hydatid disease typically have a favourable outcome if diagnosed and treated early. However, complications such as cyst rupture, infection, or secondary dissemination can lead to significant morbidity. Early recognition and timely management are critical for preventing these complications.[10]

CONCLUSION

Renal hydatid disease, though rare, should be considered in patients with renal cystic lesions, especially in endemic areas or in individuals with close contact with dogs. This case underscores the importance of imaging in diagnosis and the role of surgical intervention, combined with medical therapy, in achieving favourable outcomes.

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