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Case Report

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Renal Hydatid Cyst in an Elderly Patient: A Rare Clinical Presentation

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1. Introduction

Hydatid disease is a zoonotic infection caused by Echinococcus granulosus. Canids are the definitive hosts, herbivores are the intermediate hosts, and humans act as accidental hosts [1]. Human infection occurs via the oral-fecal route and is triggered by consuming vegetables. Tables polluted with canine waste harbor parasite eggs. After digestion, the eggs break open in the digestive system and move into the intestines. Via the mucus and penetrate the bloodstream [2]. Infection can additionally be acquired through direct contact with infected canids. Effective prevention strategies include regulation of livestock feeding, rigorous pre-market meat inspection, freezing at −18 °C, and sufficient thermal processing at temperatures above 50 °C, thereby limiting transmission within the population [3].

Hydatid disease predominantly affects the liver (50–70%) and lungs (20–30%), although involvement of other sites such as the heart, breast, cervical soft tissues, and kidney is uncommon. In humans, cysts are frequently asymptomatic and are often identified incidentally, with symptoms typically arising secondary to gradual cyst expansion. Hydatid disease should be included among the key differential diagnoses in the assessment of cystic renal masses [4].

2. Case presentation

A 63-year-old male presented with a 3-month history of continuous, localized left flank pain. He denied hematuria, dysuria, urinary frequency, fever, chills, weight loss, or loss of appetite. His vital signs were stable on examination. You can see a CT scan of the abdomen and pelvis with injected contrast (Figures. 1 and 2).

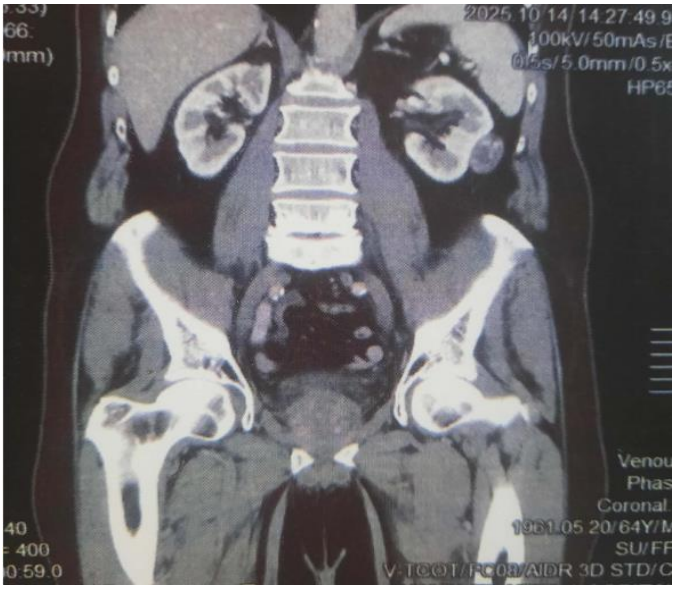


Figure 1: Coronal View of Abdominal and Pelvic CT scan With Injected Contrast of Renal Hydatid Cyst

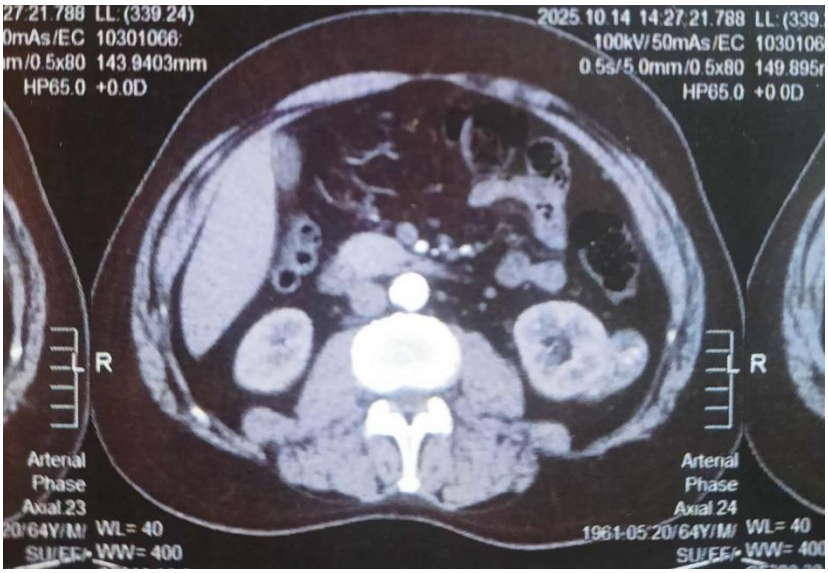


Figure 2: Axial View of Abdominal and Pelvic CT scan With Injected Contrast of Renal Hydatid Cyst

Contrast-enhanced computed tomography (CT) demonstrated a moderately sized, well-defined, multiloculated cystic mass arising from the lower pole and interpolar of the left kidney. The lesion exhibited a thin wall, with evidence of calcification and some contrast enhancement.

A key point of interest in this case is the diagnostic challenge posed by its atypical radiological appearance. Despite being from an endemic region such as Egypt, neither CT nor ultrasound findings were suggestive of hydatid disease, and the lesion was interpreted as a complex renal cyst. Consequently, hydatid disease was not considered in the preoperative differential diagnosis. The diagnosis was unexpectedly confirmed only after histopathological examination of the surgical specimen.

Laboratory investigations were within normal limits, with no evidence of eosinophilia. Urinalysis was also unremarkable, with no parasites detected. The patient subsequently underwent partial nephrectomy for cyst excision. Through an anterior subcostal approach, the skin, subcutaneous tissues, muscle layers, and fascia were incised, and the kidney was carefully mobilized. Intraoperatively, a cystic lesion was identified on the anterior aspect of the kidney. As suggested by preoperative CT findings, the cyst was located in a sub capsular plane. It appeared well encapsulated, without involvement of the renal parenchyma, and was completely separate from the kidney tissue.

The cyst was completely excised without rupture. The lesion had an abnormal shape and consistency. The specimen was sent for histopathological examination. Hemostasis was secured, and the wound was closed in layers. A surgical drain and urinary catheter were inserted at the end of the procedure. The pathology report showed Hydatid cyst with focal calcifications, Figure 3.

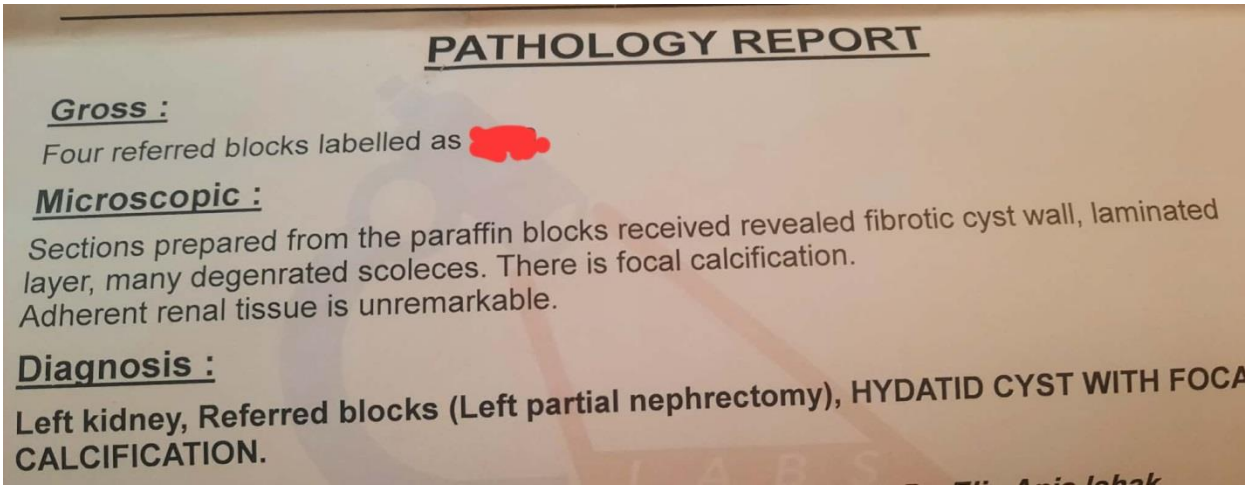


Figure 3: Pathology Report of the Specimen

A minor postoperative complication occurred, as the patient developed abdominal pain. A non-contrast CT scan was performed, which revealed a small collection at the surgical site. The collection was managed conservatively with close observation, Figure 4.

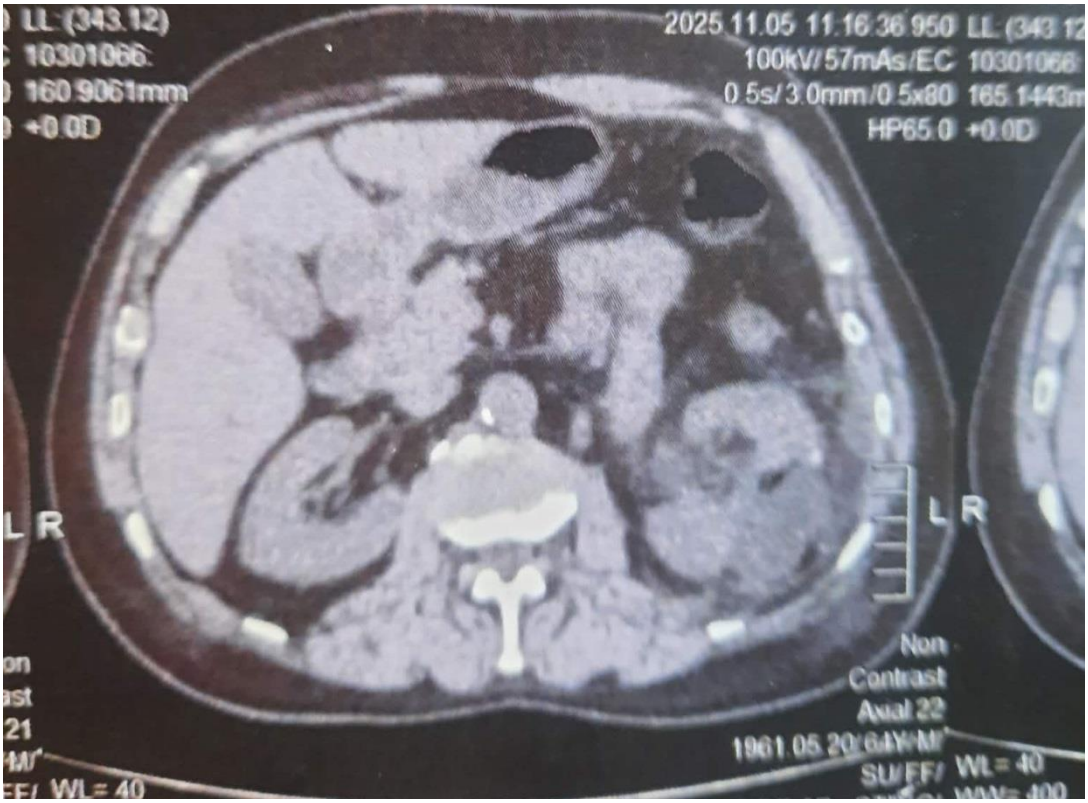


Figure 4: Axial View of Abdominal and Pelvic CT scan With Small Operative Bed Collection

3. Discussion

Hydatid cyst disease is a significant zoonotic infection with considerable public health and economic implications, particularly in endemic regions. It is caused by the larval stage of Echinococcus granulosus and can affect both humans and animals. Egypt is considered an endemic area for cystic echinococcosis, although the true incidence remains uncertain due to underreporting and lack of comprehensive surveillance systems [5].

In endemic regions, cystic echinococcosis (CE) is closely linked to pastoral communities and conditions that facilitate transmission, including close human–dog contact, abundance of stray dogs, poor sanitation, inadequate abattoir hygiene, and improper carcass disposal. In Egypt, important risk factors include rural residency, certain occupations such as farming and household work, and younger age groups, particularly those under 40 years, a pattern also reported in other endemic countries such as Iran, Lebanon, and Turkey [6, 7].

Accurate diagnosis of hydatid cysts relies on a combination of clinical assessment and adjunctive investigations, including serological tests and imaging modalities such as ultrasonography, CT, and MRI. However, both radiological and serological findings are often non-specific, which may limit diagnostic certainty. Therefore, definitive diagnosis is typically established through histopathological examination of the excised tissue following surgery [8].

Hydatid disease most commonly affects the liver and lungs, which are considered the primary sites of involvement in endemic regions, including Egypt. In contrast, involvement of other organs such as the brain is uncommon, while renal involvement accounts for a very small proportion of cases. Other atypical sites, including the pancreas and breast, are also rarely affected. This pattern highlights the rarity of extrahepatic and extra pulmonary presentations, particularly renal hydatid cysts, emphasizing the unusual nature of such cases and their diagnostic challenge [9].

Existing literature suggests that renal hydatid cysts are uncommon, with previous reviews listing only a few cases, typically occurring in females of a relatively young average age. Later research indicates a trend towards younger demographics, showing a rise in cases documented among children. In contrast, our case featured a 65-year-old man, emphasizing that renal hydatid disease, while rare, can also present in older individuals and beyond the usual demographic profile [10].

Surgery is the primary and conclusive treatment, and complete excision of the cyst is crucial to avoid recurrence. Medical

treatment with medications like Albendazole and Mebendazole is advised when surgery is not an option and can also be utilized before surgery to lower the chance of cyst spread. These agents are generally more effective in younger individuals [10].

Recurrence may occur either locally or at distant sites, most commonly due to intraoperative spillage of cyst contents. Therefore, careful surgical procedures are essential to reduce the chances of spread and recurrence [9,10].

4. Conclusion

Due to the rarity of renal hydatid cysts, establishing an accurate preoperative diagnosis is crucial. As hydatid disease predominantly affects the liver and lungs, its occurrence in unusual sites such as the kidney creates considerable diagnostic difficulty. It must be differentiated from more commonly encountered cystic lesions, including neoplastic cysts, para pancreatic lesions, and other peri renal cystic structures, to prevent misdiagnosis and inappropriate treatment.

Clinically, the disease typically manifests as a gradually enlarging cystic mass in a patient who is otherwise asymptomatic, which can further complicate early recognition.

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