

An isolated renal hydatid cyst in a 6-year-old child: A rare case report

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Isolated involvement of the kidney is rare in hydatid disease and is even rarer in children. We present a case of primary right renal hydatid cyst in 6-year-old female child who presented with pain right flank of 4 months duration. The patient was managed by nephrectomy.

Key words: Hydatid cyst, kidney, nephrectomy

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INTRODUCTION

Echinococcosis is a parasitic disease that affects both humans and other mammals, such as ruminants, sheep more receptive, dogs, rodents, and horses.^[1] Human infestation is usually caused by larval form of *Echinococcus granulosus*. Humans are accidental intermediate hosts that become infected by handling of soil, dirt, or animal hair contaminated with eggs.^[2] Kidney involvement in echinococcosis is extremely rare (2-3%), being third commonest organ involved after the liver and the lungs.^[3] Isolated renal involvement is even rarer. In children, kidney involvement by hydatid disease is very rare, constituting only 1.9 % of all cases.^[4]

CASE REPORT

A 6-year-old female patient presented with right side loin pain of 4 months duration. General physical examination revealed a ballotable lump in right renal area. The ultrasonography (USG) and Contrast-enhanced CT scan of the abdomen showed a large exophytic cyst (10 × 8 × 8.4 cm) involving mid and lower pole of right kidney with no solid component or calcifications [Figure 1] i.e. type 1 cyst according to Gharbi classification. ELISA (Serology) was suggestive of hydatid disease. IVU revealed a space-occupying lesion involving mid and lower pole of right kidney causing displacement of collecting system superiorly [Figure 2]. There was no evidence of such cystic lesion in any other viscera. The patient was explored under general anesthesia through right sub-costal incision, and the diagnosis of a hydatid cyst was confirmed. Right

nephrectomy was done, because cyst was involving almost whole of the kidney including hilum, sparing only a small portion of upper pole. Histopathological examination confirmed the diagnosis.

DISCUSSION

Echinococcosis is a zoonotic disease and is present virtually worldwide. There are only few countries that are considered completely free of *E. granulosus*.^[5]

The liver is the most common site of echinococcal infestation (54% to 77%),^[6] because the liver acts as the initial filter for the organisms. Those larvae that escape the liver are next filtered by the lungs (9% to 30%). The spleen, (0.9% to 8%),^[7] kidney (2% to 3%), and brain (1%) are other organs involved.^[6,8]

Renal hydatid cysts usually remain asymptomatic for many years. The patients usually present with vague pain in the lumbar region. Some may present with a mass palpable in the loin, and rarely some present with a history of passing whitish material also called as the "grape skin," the scolices, in the urine.^[9]

Pre-operative diagnosis of hydatid cysts can be made by ultrasound and confirmed by a CT scan. Radiography may identify an occasional calcified cyst. Caliceal distortion is the predominant finding on IVP, followed by caliectasis and non-functioning kidney, possibly caused by the mass effect of cystic lesions.^[10] CT scan is more accurate than a USG.^[8] Hypointense rim and multicystic appearance is distinctive in magnetic

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Figure 1: Contrast-enhanced CT scan of the abdomen showing a large exophytic cyst (10 × 8 × 8.4 cm) involving mid and lower pole of right kidney with no solid component or calcifications



Figure 2: Intravenous urogram (IVU) revealed a space-occupying lesion involving mid and lower pole of right kidney causing displacement of collecting system superiorly

resonance imaging (MRI) scan, which also delineates the anatomy well.^[11] Serology that consists of immuno-electrophoresis, immuno-hemagglutination test, Western Blot, and complement fixation test is helpful when diagnosis is in doubt. A combination of investigations yields a diagnosis in only 50% of cases.^[12]

Conservative management with oral Albendazole is unreliable being successful in only 40% of cases. Therefore, management of hydatid cyst kidney is mainly surgery. The preferred surgical procedure is represented by the pericystectomy or resection of the protruding dome after injection of a scolical solution and partial or total nephrectomy in cases with significantly destroyed renal parenchyma.^[13] However, renal-sparing surgery with only cyst removal may be an alternative.^[14] Recurrence is a significant problem in the late post-operative period, with an incidence ranging between 10% and 30%.^[15]

Although the isolated renal hydatid cyst is very rare and is even rarer in children, high suspicion of this disease is justified in any cystic mass of kidney in children, especially in endemic regions.

AUTHORS' CONTRIBUTION

Arif Hussain Sarmast: Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work. Afak Yusuf Sherwani: Drafting the work or revising it critically for important intellectual content. Sajad Ahmed Dangroo: Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; and drafting the work or revising it critically for important intellectual content. Mohd. Saleem

Wani: Final approval of the version to be published. Arif Hamid: Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. Hakim Irfan Showkat: Drafting the work or revising it critically for important intellectual content

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