

## A Case of Renal Hydatid Presenting with Hydatiduria – Diagnosed on Computed Tomography

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### Abstract

Renal hydatid is a very rare disease comprising 1-2% of human hydatid. Hydatiduria is a rare presentation of renal hydatid reported in 10-20% cases of renal hydatid. Here, we are reporting a case of isolated renal hydatid presented with hydatiduria which was detected as a multiloculated cystic renal mass on ultrasonography mimicking renal cell carcinoma; further diagnosed as renal hydatid with pelvicalyceal rupture on computed tomography.

### Keywords

Hydatid, Renal hydatid, Hydatiduria, Computed tomography

### Introduction

Hydatid disease is a parasitic infection caused by Cystoda Echinococcus, specially *Echinococcus granulosus* [1]. Primary hosts for the tapeworm are Canidae and dogs and intermediate hosts are usually cows, sheep, pigs and goats while humans are sometimes accidental intermediate hosts. Route of transmission is oral- faeces that is consumed with food infected with parasitic embryo. Larvae hatched in human intestine penetrates the venules and reaches liver, lung etc through bloodstream [1]. Parasitic larva create cyst in human organ.

Most common site is liver (75%), followed by lung (15%) and then rest of organ (10%) [2]. Renal involvement is rare and seen in 2-4% cases of human hydatid [3]. Since a focal renal hydatid cyst is slow growing, it may remain dormant for 5-10 years until it is huge to cause significant mass effect and compression of renal parenchyma to impair renal function [1]. Hydatiduria, a pathognomic clinical sign of renal hydatidosis is excretion of microscopic scolexes or macroscopic membranes or daughter cysts in urine which is presentation in only 10-20% cases of renal hydatidosis [4]. Hydatiduria may or may not be associated with acute renal colic.

We are reporting a case of isolated renal hydatid, mimicking renal cell carcinoma on ultrasonography (USG) and diagnosed preoperatively on computed tomography (CT).

### Case Report

A 76 years old male patient presented with dull left lumbar pain for 6 months and acute onset of discharge of whitish grapes and membrane like material in urine for last one month. There was no history of acute colic pain or haematuria. Routine blood investigations were within normal limits. No

significant abnormality was seen in routine urine microscopic examination except for increased pus cells. Chest radiograph was normal. USG performed outside was reported as multilocular cystic mass in left kidney with possible diagnosis of renal cell carcinoma. Patient was planned for nephrectomy and referred to radiology department for contrast enhanced CT abdomen.

Scanogram revealed a rim of calcification in left upper abdomen (Figure 1). A multiloculated cystic mass with mural calcification measuring 7 cm was seen at upper pole of left kidney, bulging into perirenal space and within renal pelvis. Multiple daughter cysts were seen arranged peripherally with hydatid matrix appearing hyperdense in comparison to daughter cyst (Figure 2). No significant wall enhancement was noted on post contrast scan (Figure 3). A focal bulge was noted at lower end of lesion which was seen communicating with dilated renal calyx (Figure 4A). Left renal pelvis and ureter was also dilated with diffuse urothelial thickening and enhancement suggestive of reactive inflammatory changes (Figure 4B).

On basis of CT features diagnosis of renal hydatid was

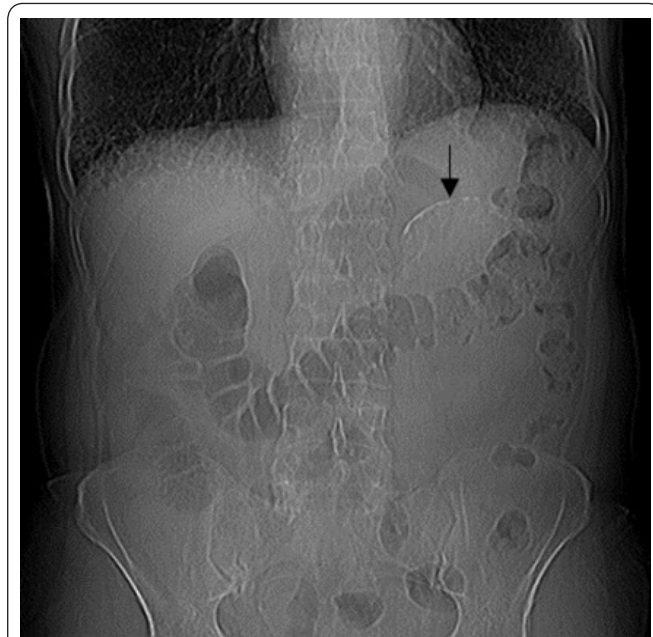


Figure 1: Renal Hydatid- CT abdomen scanogram shows a rim of calcification in left upper abdomen (arrow).

made. Diagnosis of hydatid was also supported with positive hydatid antibody on serological examination.

## Discussion

Differential of multilocular cystic renal masses are –

- Cystic renal cell carcinoma
- Multilocular cystic neoplasm of low malignant potential
- Cystic nephroma
- Mixed epithelial and stromal tumor
- Renal hydatid

Rim calcification in renal masses can be seen in both benign and malignant lesions. In a study rim calcification

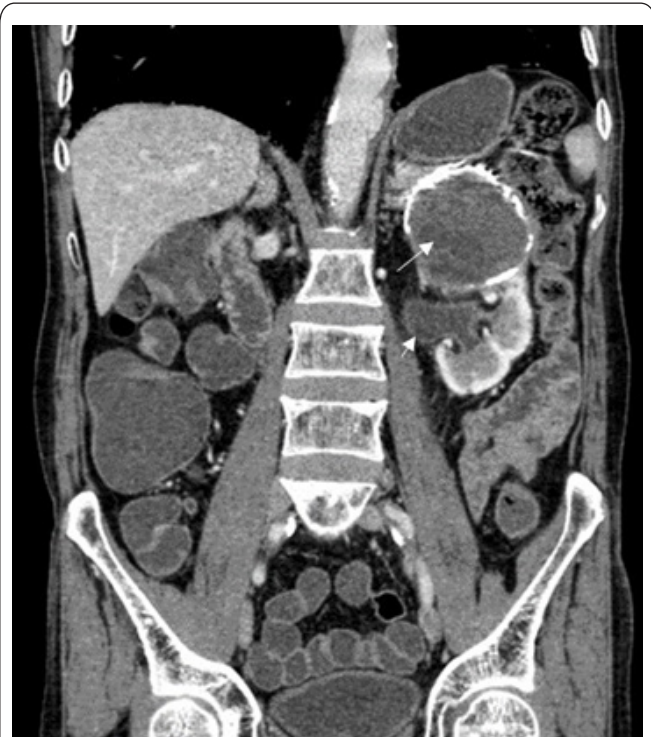


Figure 2: Renal hydatid- Coronal CECT abdomen shows left renal upper pole hydatid with rim calcification and daughter cysts (long arrow). Daughter cysts are hypodense to hydatid matrix. Dilated renal pelvis (short arrow).

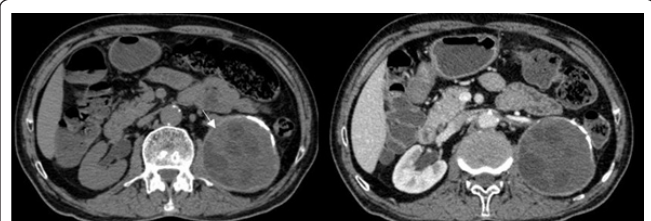


Figure 3: Renal hydatid- Precontrast (A) and postcontrast (B) axial CT abdomen images showing left renal cystic lesion with no obvious cyst wall enhancement (arrow).

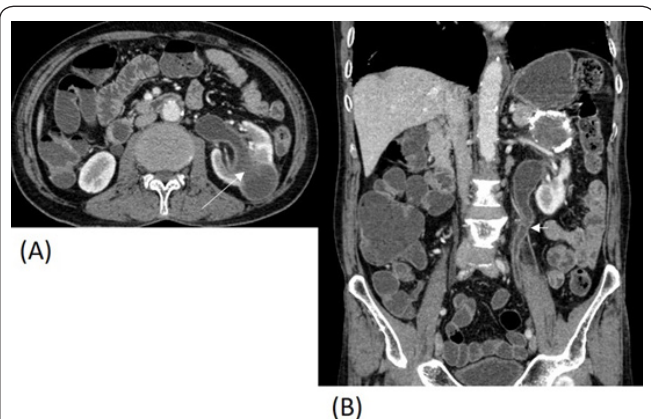


Figure 4: Pelvicalyceal rupture of renal hydatid- Axial (A) and coronal (B) CECT abdomen. (A) Lower end of hydatid cyst communicating with dilated renal calyx (long arrow). (B)- Dilated renal pelvis and ureter (short arrow) with diffuse urothelial thickening and enhancement.

without internal calcification was reported in 9 out of 60 renal cell carcinomas [5]. Cystic mass with rim calcification is reported in renal papillary cystadenocarcinoma [6]. Benign lesions with rim calcification are simple renal cyst, complicated renal cyst with haemorrhage and parasitic cyst.

Isolated renal hydatid is a rare disease which can be misdiagnosed as renal cell carcinoma on imaging. Many cases of post-surgery histological diagnosis of hydatid have been reported which were suspected to be renal cell carcinoma. There are different morphological types of hydatid appearing simple cyst like to complex mass like lesion. In this case it was a complicated ruptured hydatid with typical imaging features of hydatid showing non enhancing cystic mass with multiple daughter cysts arranged peripherally. Hydatiduria was also a clue for correct diagnosis which was overlooked by clinicians.

A case of renal hydatid is reported with large unilocular simple renal cyst that came out to be hydatid on post-surgical histology [1]. Bhaya et al reported a case of type IV hydatid seen as complex renal mass on imaging with later on spontaneous hydatiduria that clued to reach correct diagnosis preoperatively [7]. Hydatid should be a differential diagnosis for renal cystic masses specially in country like India where hydatid is endemic. Although treatment for both of renal hydatid and renal cell carcinoma is surgery but preoperative radiological diagnosis of hydatid ease the plan of management [8].

A case of successful medical management of isolated renal hydatid with hydatiduria in an old man is reported who refused to surgery [9]. Possibly correct preoperative diagnosis of renal hydatid will help to avoid surgery in old debilitating patients who can be cured with medical management.

## Conclusion

Isolated renal hydatid is a rare disease that should be suspected in cases with renal cystic masses specially in countries where hydatid is endemic. Renal hydatid with typical imaging feature of multiple daughter cysts arranged peripherally within larger cyst can be diagnosed on basis of imaging. However, in case of complex renal masses hydatiduria should be a clue for correct diagnosis of hydatid.

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