

# CASE REPORT

## COMMON LESION AT AN UNCOMMON SITE: AN ISOLATED RENAL HYDATID CYST

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**INTRODUCTION:** Human echinococcosis remains a complex problem that affects several organs. The incidence of renal echinococcosis is 2-3%. Primary involvement of the kidney without the involvement of the liver and lungs i. e, isolated renal hydatid disease is extremely rare even in endemic areas. The most common organ involvement is the liver (50-75%) followed by the lungs (15-20%) and 10-20% of cases seen in other organs.

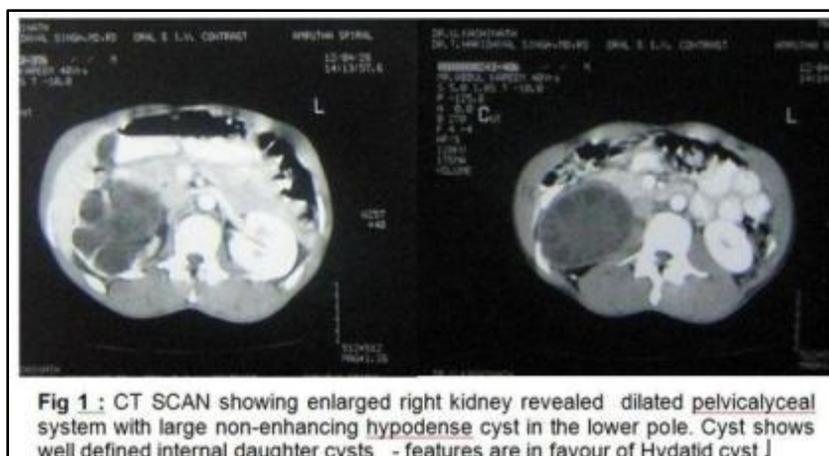
Isolated renal involvement is usually asymptomatic for years and most of the time it is an incidental diagnosis. The clinical presentations are flank pain, flank mass, sub costal pain, bowel related symptoms, hydronephrosis, chronic renal failure etc. due to compression. The renal ultrasound and contrast CT are the key diagnostic modalities.

Here, we present a rare case of isolated renal hydatid cyst discovered incidentally during the evaluation of right loin pain.

**CASE REPORT:** A 39 year old male presented with right loin pain which was associated with tenderness since 3 months. Urine examination revealed 8-10 RBC/HPF with occasional pus cell/HPF. Renal and liver function tests were within normal range.

Ultrasound abdomen showed right kidney enlargement with moderate dilatation of pelvicalyceal system and a well-defined cyst measuring 8x14 cm containing internal daughter cysts noted in lower pole of right kidney.

CT scan abdomen revealed dilated pelvicalyceal system with large non-enhancing hypodense cyst with well-defined internal daughter cysts in the lower pole of right kidney – Features are in favour of hydatid cyst [Fig. 1]. All other organs are normal.



## CASE REPORT

Right partial nephrectomy done through retroperitoneal route and sent for histopathological examination. Per operatively, 8X14 cm hydatid cyst is present at lower pole of right kidney with compression of pelviureteric junction pushing upper pole of kidney. Multiple daughter cysts were present within the cyst.

Gross specimen shows a large gray white cyst along with multiple pearly white small cysts and gray white membranous bits all together measuring 8x14 cms [Fig. 2]. Microscopic picture taken from Wet mount of the fluid present in small cysts showing Protoscolexes [Fig. 3].

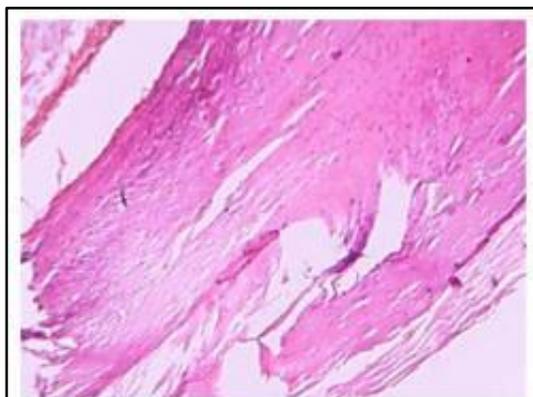


**Fig.2 :** Gross Specimen – Received grey white cystic mass along with multiple pearly white small cysts and grey white membranous bits all together measuring 8x14 cms. Small cysts filled with clear fluid.

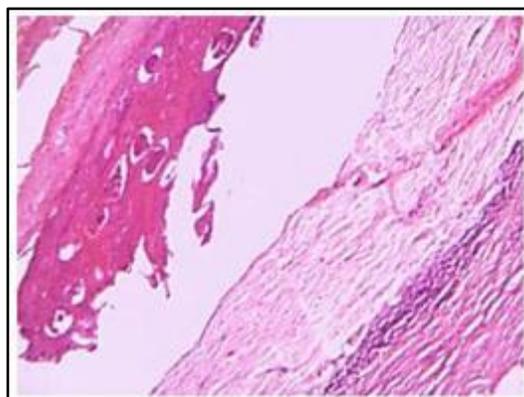


**Fig.3:** Microscope picture taken from wet mount of the fluid present in small cysts showing Protoscolexes.

Haematoxylin & Eosin (H & E) stained section from the large cyst revealed hydatid cyst membranes [Fig. 4] along with focal areas of compressed renal parenchyma [Fig. 5] and transitional epithelium [Fig. 6]. H&E stained section from small cysts revealed acellular laminated hydatid membrane with brood capsules showing protoscolexes [Fig. 7].



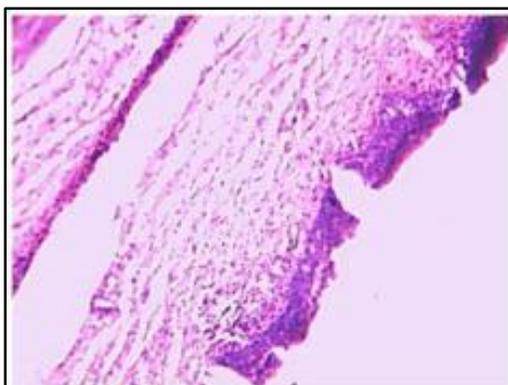
**Fig.4 :** H & E stained section showing acellular laminated membranes of hydatid cyst .



**Fig.5:** H&E stained section showing fibrous adventitious layer of the cyst along with compressed renal parenchyma at other side.

## CASE REPORT

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**Fig.6 :** H&E stained sections from the cystic lesion shows transitional epithelium with fibrous adventitious layer of the cyst at other side.



**Fig.7:** H&E stained section taken from the small cyst showing acellular laminated hydatid membrane with Brood capsules showing protoscolexes.

**DISCUSSION:** Human echinococcosis is a world-wide cyclozoonotic parasitic infestation caused by the larval stage of the tapeworm namely echinococcus.<sup>1</sup>

The two most important forms, which are of medical and public health relevance in humans are most common cystic echinococcosis caused by *Echinococcus granulosus* and rare alveolar echinococcosis, which is a severe form caused by *Echinococcus multilocularis*.

Humans are the accidental intermediate hosts infected through contact with a definitive host or by handling the soil or dirt that contains eggs, or ingestion of the contaminated water or vegetables.<sup>2</sup> In humans, hydatid disease involves mostly liver (75%), next is lung (15%).<sup>3,4</sup> Renal involvement is rare (2-3%). Isolated renal hydatid disease is extremely rare even in endemic areas.<sup>5</sup>

Clinically most patients with renal echinococcosis are asymptomatic. As a lesion progresses, compression causes symptoms like dull flank pain, haematuria, palpable mass, PUJ obstruction, hydronephrosis, chronic renal failure etc.<sup>6,7</sup> Renal ultrasound is the most appropriate method of initial evaluation. Various pathognomonic features on the ultrasound included spoke wheel appearance caused by multivesicular cysts, snow storm signs of hydatid sand, and water lily signs of detached and floating membranes.<sup>8,9</sup> An intravenous urogram can demonstrate a communication within the pelvicalyceal system. Typical CT findings for renal hydatidosis include a cyst with a thick or calcified wall, a unilocular cyst with a detached membrane, a multiloculated cyst with mixed internal density, and daughter cysts with lower density than the maternal matrix.<sup>8</sup> An expansible, hypoattenuating mass with a well-defined wall and daughter cysts within the parent cyst are typical findings, as seen in our case. The presence of daughter cysts on the CT helps to differentiate hydatid cysts from other complex renal cysts. When in doubt, serological tests aid in diagnosis. The Casoni test has been largely abandoned, as it is unreliable.<sup>10</sup>

The treatment of hydatid cysts of the kidney is mainly surgical. Renal hydatid cysts with clear fluid and drainable material can be treated by sonographically guided percutaneous aspiration, injection, and reaspiration (PAIR) technique.<sup>11</sup> Chemotherapy usually albendazole is administered adjunctively before and after surgery to prevent recurrence. Chemotherapy is used along with or without PAIR in inoperable cases. Renal-sparing surgery, cystectomy plus

# CASE REPORT

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pericystectomy, is possible in most cases (75%). Nephrectomy (25% of cases) must be reserved for nonfunctioning kidneys, cysts replacing an entire renal parenchyma, and cysts opening into the pelvicalyceal system.<sup>12</sup> Partial nephrectomy done in some studies.<sup>12,13</sup> Retroperitoneal approach is generally preferred to avoid peritoneal contamination.<sup>14</sup>

Our case is presented with loin pain and tenderness. Ultrasound and CT Scan abdomen shows all organs are normal except right kidney showing hydatid cyst at lower pole compressing pelviureteric junction causing dilatation of upper pole calyces. Patient is treated successfully with partial nephrectomy through retroperitoneal route to prevent peritoneal spillage and was an attempt to prevent recurrence. The patient was pre and post operatively managed with 10 mg/kg per day of albendazole for 2 weeks. No recurrence of hydatid disease was observed within 2 years of follow up. The patient is doing well in the follow up care.

There are no specific clinical symptoms or signs that will reliably confirm the diagnosis of renal echinococcosis. In addition, there is no laboratory finding that is pathognomonic for hydatid disease except for hydatiduria. Routine blood tests are generally normal except for eosinophilia which is found in only 50% of the cases. Radiological studies have a more important place in the preoperative diagnosis of renal hydatid disease. However, there is no specific sign on plain radiography or intravenous urography, and ultrasound or computed tomography cannot always show a hydatidosis as a specific lesion.<sup>15</sup> From these reasons, sometimes it is difficult to differentiate between a unilocular hydatid cyst without mural calcification and a simple renal cyst. So, despite its rarity, hydatid disease should be included in the differential diagnosis of cystic lesions in solid organs or other anatomic sites, especially in endemic countries.

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# CASE REPORT

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