



HYDATID DISEASE OF KIDNEY -A RARE CASE REPORT

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Abstract :

Hydatid disease of kidney is rare. We report a rare case of renal hydatidosis in a 37 yr old female who presented with complaints of pain in left hypochondrium and left lumbar region for 2 wks duration. Histopathological examination confirmed the diagnosis.

Keyword :

Hydatid disease, Immunohistochemistry, hydatiduria, hydatidosis

INTRODUCTION:

Hydatid disease or echinococcal disease is a parasitic disease that affects both humans and other mammals such as sheep, dogs, rodents and horses. Hydatid disease mainly affects the pulmonary and digestive systems. The liver (75%) and the lung (15%) are more commonly affected. Involvement of kidney in echinococcosis is a rare clinical scenario. Patient may be asymptomatic or may present with symptoms of lumbar region pain, hematuria, dysuria and hydatiduria³. Most patients with primary involvement of kidney remain asymptomatic for many years.

CASE HISTORY:

A 37 year old female presented with pain in the left hypochondrium and left lumbar region for 2 wks. The patient also had history of passing bubble like material in urine for 2wks. Physical examination revealed a palpable mass in the left hypochondrium and left lumbar region measuring about 11 cm from the left costal margin. It was firm in consistency with irregular surface. The routine hematological and serological tests were negative. Abdominal ultrasound revealed enlargement of left kidney with multiple cystic spaces and liver was found to be normal.

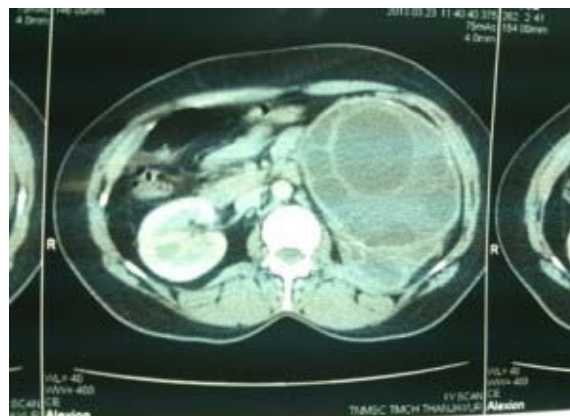


FIGURE 1-CECT abdomen revealed a large cystic lesion measuring 10x7 cms occupying the entire kidney.

CT scan showed a multilocular cystic lesion (FIG 1). IVP showed a non functioning left kidney. In view of history which was suggestive of hydatiduria and radiological findings, a clinical diagnosis of renal hydatid cyst was rendered. Left nephrectomy was performed.

OPERATIVE PROCEDURE: FIGURE 2-operative gross finding of hydatid cyst kidney



Retroperitoneal approach through LOIN INCISION (11th rib bed incision)

PER OP FINDING :Left kidney was totally replaced by multiple hydatid cysts (FIG 2)

Per operatively left kidney was found as a bag of cysts with multiple

Daughter cysts. They were pale yellow in colour, translucent and small in size.

During surgery, the liver was normal in appearance and no other organs were involved

GROSS EXAMINATION:

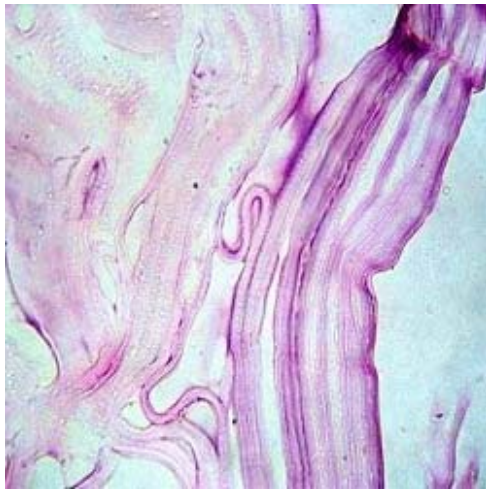
Kidney was occupied by multiple cysts which measured 9x6.5 cm (FIG 3). The cut section showed a multiple grey white cysts (FIG 4). Largest cyst measuring 5 cm in diameter and smallest cyst measuring 1 cm in diameter. No normal renal parenchyma made out.



FIGURE 3-large cystic kidney measuring 10x7 cms

FIGURE4-cut section of kidney showing drained large multilocular cyst

MICROSCOPIC EXAMINATION:



Hematoxylin and eosin stained section revealed a fibrochitinous cyst wall which was focally lined by granulation tissue which overlay on the compressed renal parenchyma with interstitial fibrosis. The cyst showed a lamellated fibrochitinous wall which contained scolices and brood corpuscles (FIG 5,6,7)

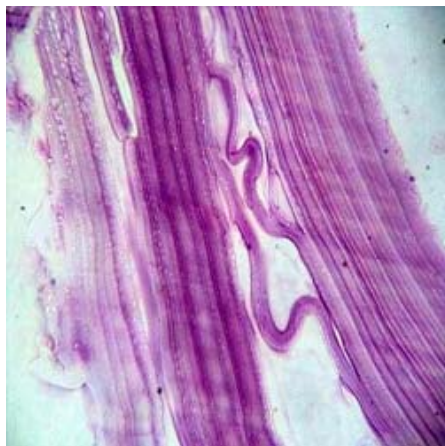


FIGURE 5-10X View of lamellated fibrochitinous hydatid cyst wall

FIGURE 6-40x view of lamellated fibrochitinous hydatid cyst wall

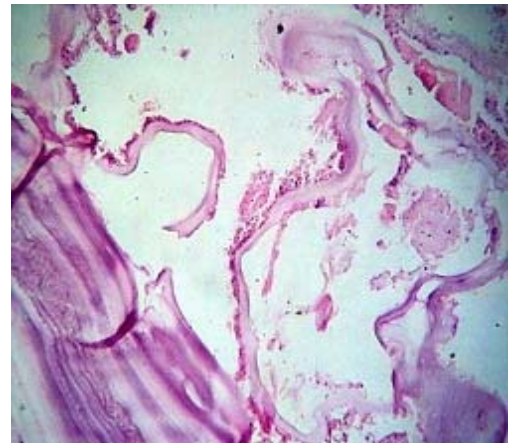


FIGURE 7-10X view of lamellated fibrochitinous hydatid cyst wall

DISCUSSION:

Echinococcosis is a zoonosis which is produced by *E. granulosus*. Humans act as intermediate hosts and they acquire this infection from contacts with definitive hosts or from the ingestion of soil, water or vegetables which are contaminated with the larval stages of *E. granulosus*. The adult worm attaches to the mucosa of the small intestine of the definitive host by means of hooklets, where it releases the infective eggs. The parasitic embryo reaches the portal venous system or the lymphatic system and it affects the liver, which acts as the first line of defense and is most commonly involved (75%), followed by the involvement of the lungs (15%)³. Any organ may be secondarily involved, following a haematogenous spread⁴. However, the involvement of the kidney is rare and it comprises only 2–3% of cases^{1,2}. We are presenting one such case of an isolated renal hydatid cyst. The patients with renal hydatid cysts commonly present with loin pain and haematuria. The rupture of the hydatid

cyst into the collecting system results in hydatiduria in 10–20% of the cases and it is usually detected microscopically ⁵. A gross hydatiduria is rare and it is diagnostic for the disease. Eosinophilia is also noted in these patients. Radiological techniques aid in the confirmation of the diagnosis. On ultrasonography, the hydatid cyst may be seen as unilocular (type 1), mimicking a simple renal cyst or multiseptate daughter cysts (type 2), with pathognomonic multiple echogenic foci which are produced by the hydatid sand, giving a “falling snowflake” appearance or type 3 cysts which exhibit a bright echogenic focus with a strong posterior acoustic shadowing ⁹. The diagnostic CT findings of renal hydatid disease revealed a unilocular cyst (type 1), a multilocular cyst (type 2) and a completely calcified cyst (type 3) ⁸. A thick calcified cyst wall may be observed in the type 1 and the type 2 cysts. The present case revealed the features which were suggestive of a type 2 hydatid cyst on radiology, with a multiloculated cystic lesion and calcified areas. The wall of a hydatid cyst is composed of 3 layers. The outermost layer which is formed by modified host cells, the middle laminated cellular membrane and the inner germinal layer, where the infectious larval forms are produced. The cystic fluid is a clear transudation and when it is released into the circulation, it causes eosinophilia and anaphylaxis ^{4,8}. Histopathologically, the cysts are described to be of the closed type (noncommunicating) or of the open (communicating) type. The hydatid cyst of kidney is considered closed if all the three layers of the cyst i.e pericyst, ectocyst and endocyst are intact. The closed type is characterized by an adventitia which is produced as a result of the inflammatory and the fibroblastic responses in the adjacent renal tissue, and a laminated membrane. A continuous fluid

secretion in such a closed cyst results in its rupture, thus causing the formation of an open cyst. The rupture may be in a calyx or in the renal pelvis, it may be intraperitoneal or retroperitoneal or in the pleural cavity through the diaphragm. Albendazole is recommended pre and post-operatively to sterilize the cyst and to prevent anaphylaxis and recurrence ^{6,8,9}. Surgery is the treatment of choice in renal hydatid cyst. Kidney sparing surgery is possible in 75% cases. Nephrectomy (25%) reserved for destroyed kidneys ⁶.

REFERENCES :

1. saxena s.gupta ,nigam DK,tahiliani ND,saxena KN.Hydatid cyst of kidney presenting as hydatiduria.j assoc physicians India 1990;38:359-60
- 2.von sinner WN,hellstrom M,kagevi I,norlen BJ.hydatid disease of urinary tract.J urology 1993;149:577-80
- 3.Ritesh mongha,srinivas narayan,anup k,kundu.primary hydatid cyst of kidney and ureter with gross hydatiduria:a case report and evaluation of radiological features .indian j urol.2008;24:116-117
- 4.Pedosa I,Saiz A, Arrazol L,ferreirosj,pedrosacs.hydatiddisease: radiologic and pathologic features and complications.radiographics 2000;20:795-817
- 5.Unsal A,CimentepeE,Dilmen G,Yenidunya S,Saglam R. An unusual cause of renal colic:hydatiduria.int j Urol.2001;8:319-21
- 6.Zmerli S,Ayed M,Horchani A:Chami I,et al.Hydatid cyst of the kidney diagnosis and treatment.world j surg 2001;25:68-74
- 7.morris DL,A pre operative albendazole therapy for hydatid cysts.BR J Surg 1987 Sep;74(9):805-806
- 8.Polat P ,Kantarci M,Alper F,Suma S,Koruyucu MB,Okur A.Hydatid disease from head to toe.radiographics 2003;23 (2);475-94

9.Ishimitsu DN,Saouaf R,Kallman
C,Balzer BL.Best cases from the
AFIP;Renal hydatid disease.Radiographics 2010 Mar;30(2):334-
37 10.Mackinnon KJ,oliver JA.Renal hy-
datid disease.Canad Med Ass
J1964;90:689-92.