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Primary Hydatid Cyst of Kidney: A Rare Echinococcus Presentation

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Abstract
Primary hydatid cyst of kidney is an uncommon and rare disease. Occasionally it may mimic intraabdominal tumour or present with gross ascites. We are reporting a case of giant primary hydatid cyst of kidney presenting as lump abdomen which was mimicking as cystic renal cell carcinoma on CT Scan.

Keywords
Hydatid cyst of kidney, cystic renal cell carcinoma, Echinococcosis

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I. INTRODUCTION

Hydatid disease may involve any part of body. However, the most common sites are liver (55–70%), followed by lung (18–35%), with incidence in unusual sites accounting for 8–10% of cases.[1] Usually the kidneys are involved as a part of multiple organ hydatidosis. However primary kidney involvement in Echinococcosis is extremely rare, it is the third commonest organ involved after liver and lungs, constituting only 2-3% of all cases.[2-4] Primary involvement of the kidney without the involvement of the liver and lungs is even more rare. Hydatiduria accompanies only 5-30% of all cases of renal hydatidosis and is usually microscopic. We present a rare case of primary left renal hydatid cyst without hydatiduria. The diagnosis of primary hydatid cyst of kidney, in the absence of hydatiduria is usually radiological, as most patients have negative immunological tests.[5]
In our case the CT scan revealed the possibility of cystic renal cell carcinoma.

CASE

A 60 year old female labourer presented with chief complaints of pain and mass in left side of abdomen for 3 months. Significant history of weight loss was present. History of loss of appetite and weakness was also present. On examination a firm globular mass with uniform consistency was present in left lumber area extending from left subcostal margin to left iliac fossa. It was about 18 X 15 cm in size, bimanually palpable and having well defined margins. Bowel and bladder habits were normal. After conducting the necessary blood and urine examinations which were within normal limits, USG and CT scan were performed which revealed irregular thick walled cystic renal mass of approx. size of 14.32cm x 11.52cm with multiple enhancing nodule and possibility of cystic renal cell carcinoma (**Figure 1**). Laparotomy was performed with Carmine incision. The intra-operative findings were as follows:-

- There was a homogenous mass approx size of 15 X 12 cm which was adherent to splenic pedicle and mesocolon occupying almost whole of left kidney and nephrectomy was done.
- Splenectomy was also performed as the mass was adherent to splenic pedicle.
- Mass opened up for gross examination. Mass contained clear fluid and yellowish membrane (germinal layer with brood capsule) was found. (**Figure 2**). So possibility of hydatid cyst was kept.

Histopathological examination also showed features of hydatid cyst. Pieces from kidney showed pericyst, around which the glomeruli were fibrosed and hyalinized along with inflammation in interstitium.
Postoperative period was uneventful. Patient was discharged in satisfactory condition Patient was given a course of albendazole (dose: 10 mg/kg/day) for a period of 28 days with regular follow-up. Post operatively patient is disease free till 3 years of follow up.

II. DISCUSSION

Echinococcosis in man is a cyclo-zoonotic parasitic disease caused by the larvae of dog tapeworms. Three types of Echinococcus are responsible for this infestation: Echinococcus granulosus, Echinococcus multilocularis and Echinococcus vogeli. Genitourinary involvement of the disease is caused mainly by E. granulosus, but renal, ureteral, and testicular echinococcosis caused by E. multilocularis also have been reported. [6]

Dogs and foxes are the definitive hosts. Ova are passed in the faeces and most human infestation occurs following ingestion of materials contaminated with dog faeces. The ova penetrate the intestine and pass via the portal vein to the liver. After filtration by the liver, larvae seed and form a reactive cyst in the end-organ. The asymptomatic period is too long and disease might be diagnosed even after 20-25 years post infection.[3] The diagnosis of a hydatid cyst is sometimes difficult. When the symptoms appear , pain is the commonest feature. Fever with chills and rigors can occur if the cyst is secondarily infected. Rupture of the cyst is the most common complication and it can be the result of trauma or pressure from the growing cyst. This may result in anaphylactic shock and in the formation of localized or secondary echinococcosis.[7]

The most common site locations are the liver and the lungs. Occassionally, the cyst may progressively increase in size, mimicking gross ascites or an intra abdominal tumour. Involvement of kidney is uncommon.[4] When the genitourinary tract is affected, the site is almost uniformly renal, but prostatic, bladder, paravesical, ureteral, epididymal, and testicular involvement have been reported.[8] Hydatid cyst of the kidney with all the three layers i.e. pericyst , ectocyst , endocyst is considered to be closed.[9] Although it is not well established, the hydatid larva is believed to reach the kidney through retroperitoneal lymphatics.[1]

Patients often present with dull flank pain, hematuria, palpable flank mass, hypertension, and renal colic. Rarely presents with ureteropelvic obstruction and chronic renal failure.[9] This may mimick genitourinary tumours which include complex renal cysts and renal cell carcinoma, as present in our case.[4] The only pathognomonic sign of the disease is hydatid gelatinous material (grape skins, daughter cysts) in the urine, caused by the rupture of the cyst into the collecting system. There are different incidences of hydatiduria in literature; a study by Horchani et al. reported it to be 28%; a study by Göğüş et al. reported it as

5% and in the study conducted by Mehmet Demir, no cases were observed.[10] The only abnormality in the routine blood examination of patients with hydatid disease that has diagnostic implications is eosinophilia, which is reported in 40% to 50% of cases.[8]

Imaging findings in hydatid disease depend on the stage of the cyst growth i.e. whether the cyst is unilocular, contain daughter cysts, or is partially or completely calcified. A difference in attenuation and signal intensity between the fluid in the central portion of the cyst and in the peripheral cysts is the typical finding in Echinococcosis due to difference in content.[9] USG and CT are investigation of choice. USG is particularly useful for the detection of cystic membranes, septa and the hydatid sand.[4] CT scan show a smooth space – occupying lesion with several septa and cyst wall calcification. Hypointense rim and multicystic appearance is distinctive in Magnetic Resonance Imaging which also delineates the anatomy well. Intravenous urogram rules out communication with renal ductal system.[11] Spherical cysts with a peripheral calcification may be seen on a plain radiograph of the abdomen.[4] This information should be considered in conjunction with serologic tests (IgG-specific titres) consisting of immunoelectophoresis, immune- haemagglutination test and complement fixation test.[11]

Potential lethal complications necessitates early diagnosis and treatment of hydatid disease which involve elimination of parasite and prevention of the recurrence of the disease . The treatment option for hydatid cyst of the kidney depends upon stage, location, size and complications in the respective patients and include medical treatment and surgical procedures. The procedures includes conservative and radical procedures along with minimally invasive and laparoscopic procedures.[4] Conservative medical management with albendazole is unreliable, being successful in only 40% of the cases. Radiological intervention in the form of Percutaneous Aspiration Injection Re-Aspiration followed by Percutaneous drainage (PAIR-PD) has been described, but is successful in only 70% of unilocular cysts.[11] Surgery options for renal hydatid cyst include total excision, wedge resection or partial nephrectomy, partial pericystectomy followed by capitonnage, re-approximation of the pericyst, or marsupialization.[9,11] Conservative renal sparing surgery (cystectomy or pericystectomy) is possible in 75% of cases or radical (nephrectomy) surgery for damaged kidneys resulting from old cysts opening into excretory cavities and complicated by renal infection is usually effective in curing the patient.[12]

III. CONCLUSION

We present a case of Echinococcosis of the kidney that is interesting because of the uncommon site of localization and uncommon way of presentation. We want to illustrate the diagnostic and therapeutic approach to management of the infection. In our case there was no hydatiduria and no eosinophillia. The diagnosis of primary hydatid cyst of kidney, in the absence of hydatiduria is by CT scan as most patients have negative immunological tests. In our case the CT scan findings were suggestive of cystic renal cell carcinoma as reported

by radiologist. Renal hydatid cyst was diagnosed postoperatively on gross examination of specimen which was proved on histopathology. It is important to keep hydatid disease as one of the rare but possible differential diagnosis in large cystic lesions of the kidney. Blind aspiration should be condemned unless a correct diagnosis is reached before.

REFERENCES

[1]. Fouzia, Siraj[a]; Sharma, Shruti[a]; Pawan, Vasudeva[b]. Primary hydatid cyst of the kidney presenting as a complex renal mass. Journal of The Egyptian Society of Nephrology and Transplantation 17(2):p 64-66, Apr–Jun 2017

[2]. Mudholkar VG , Suwarnkar SV, Deshpande SA, Kadam PN. Isolated renal hydatid disease with gross hydatiduria. Indian J Pathol Microbiol. 2011 Jul-Sep;54(3):640-1

[3]. Tehranchi A , Bukani HM , Delshad AM , Hamedanchi S. Primary hydatid cyst of the kidney in a 10 year old boy. Urology journal 01/2013; 10(3):1004-6.

[4]. Gupta A, Kalhan S, Singhal MK , Singhal O, Kaur V. Isolated Renal Hydatid Cyst Mimicking Renal Cell Carcinoma: A Diagnostic Dilemma. Journal of Clinical and Diagnostic Research. 2012 June, Vol-6(5): 890-892

[5]. Mongha R, Narayan S and Kundu AK. Primery hydatid cyst of kidney and ureter with gross hydatiduria: A case report and evaluation of radiological features. Indian J Urol. 2008 Jan-Mar; 24(1)*: 116–117.*

[6]. Reza HAM, Rreza G, Nastaran B, Mousa M. Renal hydatid cyst; a rare infectious disease. Oxf Med Case Reports. 2019 Mar 29;2019(3):omz011. doi: 10.1093/omcr/omz011.

[7]. Jahangiri F, Sayyahfar S, Zarei E, Hoseini R, Nasiri SJ. Renal Hydatid Cyst or a Simple Cyst? Report of a Rare Case. Arch Pediatr Infect Dis. 2018;7(2):e68459.

[8]. Buckley RJ, Smith S, Herschorn S, et al. Echinococcal disease of the kidney presenting as a renal filling defect.*J Urol.* 1985;133:660-661.

[9]. Kamath AS, Rao SP, Ramaswamy A S, Nayak VJ. Isolated renal hydatid cyst. J NTR Univ Health Sci 2014;3:70-1

[10]. El Amrani S, Imrani K, Moatassim Billah N, Nassar I. Primary extra hepatic hydatid cyst of the kidney: A case report. SAGE Open Med Case Rep. 2024 Feb 25;12:2050313X241233188.

[11]. Shukla A, Garge S, Verma P. A case of large renal hydatid cyst. Saudi J Kidney Dis Transpl 2011;22:538-40

[12]. Geraci e, Pallotti S, Bassi GP, Maj L. Hydatid cyst of the kidney-Case report. Minerva Urol Nefrol. 2002 Jun;54(2):135-8.

FIGURES

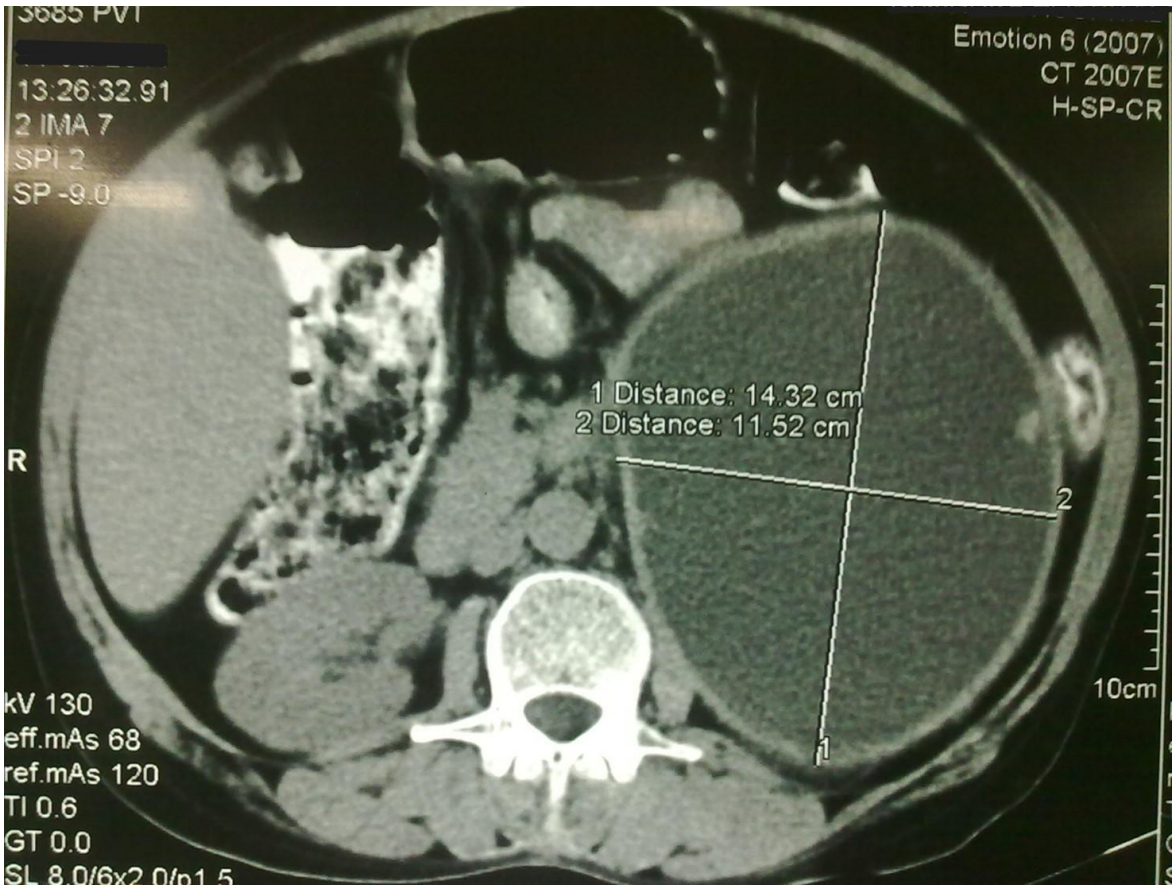

Figure 1 : CECT Abdomen scan showing irregular thick walled cystic renal mass with multipte enhancing nodule.

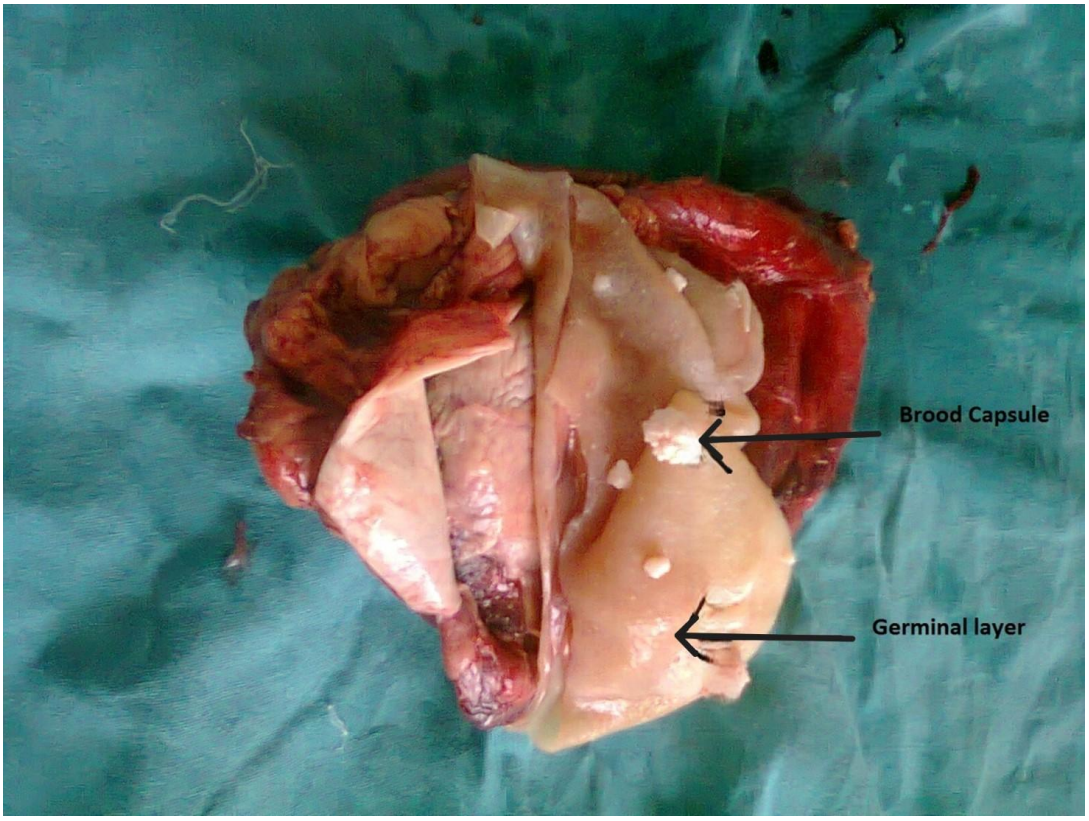

Figure 2 : Cut section of cyst showing yellowish membrane (germinal layer) with brood capsules.