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Renal Cystic Echinococcosis and Avoiding Rupture the Approach

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Abstract

Hydatid Cysts are not an uncommon entity. Renal Hydatid cysts are relatively uncommon as compared to hydatid cysts in the liver. They may be symptomatic or remain silent and present as an incidental finding. Rupture of Hydatid cysts can be dangerous and the need to manage bigger cysts poses a medical and surgical problem.

Aim: The aim of the article is to provide information about the rare location of the hydatid cyst in the kidney and the general approach of management of such rare cysts.

Method: Review of literature from all standard text, latest references from standard indexed journals taken to verify the associations.

Conclusion: Management of Renal hydatid cysts may present with challenges. Management of cysts in different locations and different sizes has to be taken with care and such decisions depend on multiple factors. As a common demonstrator, catastrophic rupture and dissemination should be avoided in all cases.

Keywords: Rupture; Emergency; Acute Abdomen; Transperitoneal; Retroperitoneal; Nephrectomy; Renal

Introduction

Renal Hydatid cysts are a rarity. Hydatid Cysts are commonest in liver and preferably in the right lobe. Renal hydatid cysts are not common and especially in Kashmir. The kidneys may rarely be affected in isolation and may be a part of rare, disseminated hydatid disease. The overall percentage of Renal hydatids is not more than 3 percent of all locations and lower in this part of the world. Reports of Renal Hydatid in literature are not common and there is no consensus on operative methods for such cases. The most feared complication of Renal cysts is rupture and dissemination and anaphylaxis.

Rupture into peritoneal cavities should be avoided at all costs. Surgeons must choose the safest methods aimed at preventing such complications. The aim of Operating Renal Hydatid cysts should be Kidney sparing procedures wherever possible. However, when the kidney is excessively damaged the surgeon is left with no other option than to perform Nephrectomy. Medical treatment along with Puncture, aspiration injection reaspiration (PAIR) is done in cases of inoperable renal hydatid disease.

Echinococcus granulosus Causes Hydatid cyst disease. Most cases are reported from China, Middle East, Central Asia and America [1]. The kidneys may rarely be affected in isolation and may be a part of rare, disseminated hydatid disease [2]. Most patients may remain asymptomatic presenting diagnostic challenge [3]. Characteristics of Echinococcus granulosus are that it is a cestode and commonly known as dog tapeworm. It has a Scolex with four suckers and a double circle of hooks. Adult worms have only three proglottids. Dogs are infected when they ingest the entrails of sheep. The adult worms develop in the gut and eggs are passed in the feces.

Eggs are ingested by sheep and hatch hexacanth larvae in the gut that migrate in the blood to various organs, especially the liver and brain. Larvae form large, unilocular hydatid cysts

containing many protoscoleces and daughter cysts. Laboratory Diagnosis of Echinococcus granulosus is serologic tests by indirect hemagglutination. Echinococcus granulosus causes Cystic Echinococcuosis, Echinococcus multilocularis causes Alveolar Echinococcuosis and Echinococcus vogeli causes Polycystic disease. Hydatid cysts usually present within lover. Reports of hydatid cysts in brain, spleen, pancreas, Gastrointestinal tract have also been reported. Cases of disseminated hydatid disease with cysts involving multiple organ systems simultaneously have also been reported.

Discussion

Renal hydatid cysts are relatively uncommon. The distribution of cysts can be in the form of solitary cysts or multiple cysts. Bilaterally cysts may be seen. Depending upon the location and size patients with renal hydatids may present with different symptomatology. Larger cysts may present with pain. Flank pain, palpable mass, hematuria, fever and malaise are main symptoms. Low back ache is mostly seen in case of renal hydatid. Renal hydatid cysts mostly tend to be multilocular. Smaller daughter cysts usually accompany. The presentation depends on the Anatomical location of the cyst and the structures it compresses. The cysts can compress the pelvicaluceal system or the ureter in its proximal part and the classic hydatiduria is not usually seen.

The wall of the hydatid cysts usually tends to be hard. USG, CT scan or MRI can pick up renal cysts readily [4,5]. CT is preferred over USG as CT picks up calcifications, intracystic gas and anatomical mapping. Aspiration of simple cysts is usually done but this can be associated with high risk of recurrence. Big cysts tend to rupture more. Cysts with high intracystic pressure can rupture more often. Rupture into peritoneal cavities can be dangerous. It should be avoided at all costs. Acute abdomen in the form of severe abdominal pain, severe flank pain, tenderness and rebound tenderness especially around flanks may suggest rupture. Severe urticarial or allergic reactions may occur. Rupture should be treated as an emergency.

Internal capsule excision or external capsule excision is done. External Capsule excision is preferred in case of large Hydatid cysts. Nephrectomy has been seen as the treatment of choice for most complicated cysts especially in cases where large areas of kidney are destroyed and only a small amount of functional renal tissue is left. The discretion of a surgeon to remove whole kidney is mostly when the surgeon is not satisfied that keeping residual tissue would not lead to relapse or cure [6]. Whether to perform Partial or total Nephrectomy depends on cyst size, involvement of surrounding area, rupture, complication or serious renal injury [7,8]. Laparoscopic methods are not generally preferred in case of renal hydatid as there are chances of cyst rupture, dissemination and incomplete removal.

Transperitoneal or Retroperitoneal approach may be used. Transperitoneal approach is preferred by most due to more field area but chances of disseminaton into peritoneum are high by this approach [9]. In most cases cystectomy is performed and nephrectomy avoided. Ablation of the hydatid membrane and small vesicles is done. A silent cyst may be prone to rupture. Any patient presenting severe abdomen after a diagnosed hydatid should be evaluated carefully and immediately with high index of suspicion of rupture and any allergic or anaphylactic reaction would be in favor of rupture. A patient presenting such symptoms after surgery may also indicate dissemination following surgery. The dreaded complication of dissemination and rupture must be kept in mind always (Figures 1-3).

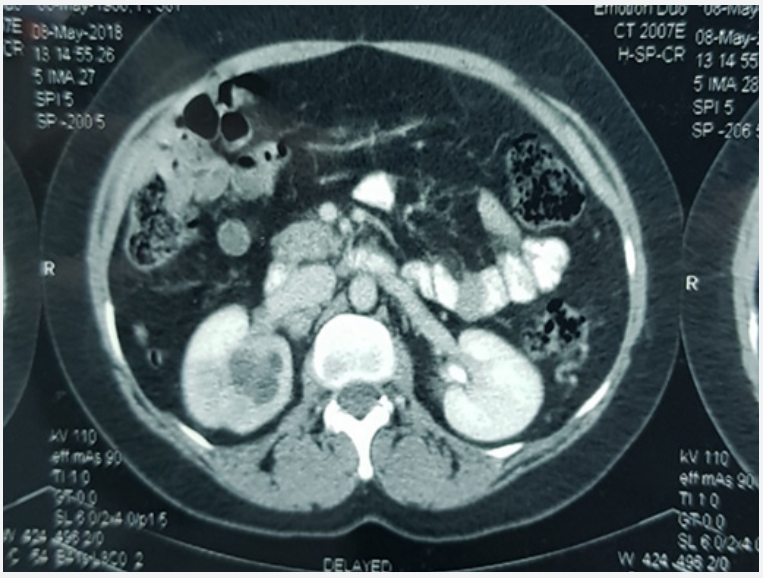

Figure 1: CT: Renal Hydatid with Daughter Cyst.

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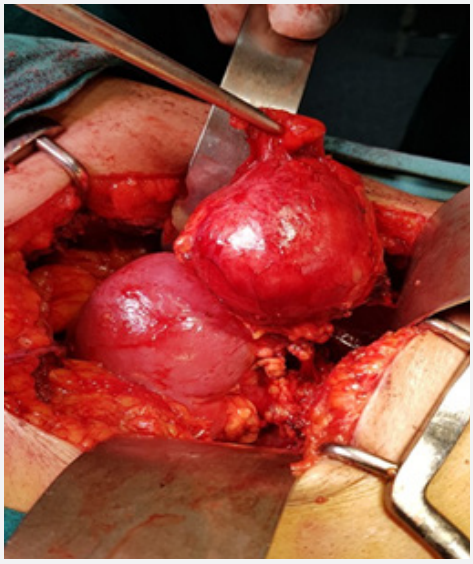

Figure 2: Excising Renal Hydatid Cyst.

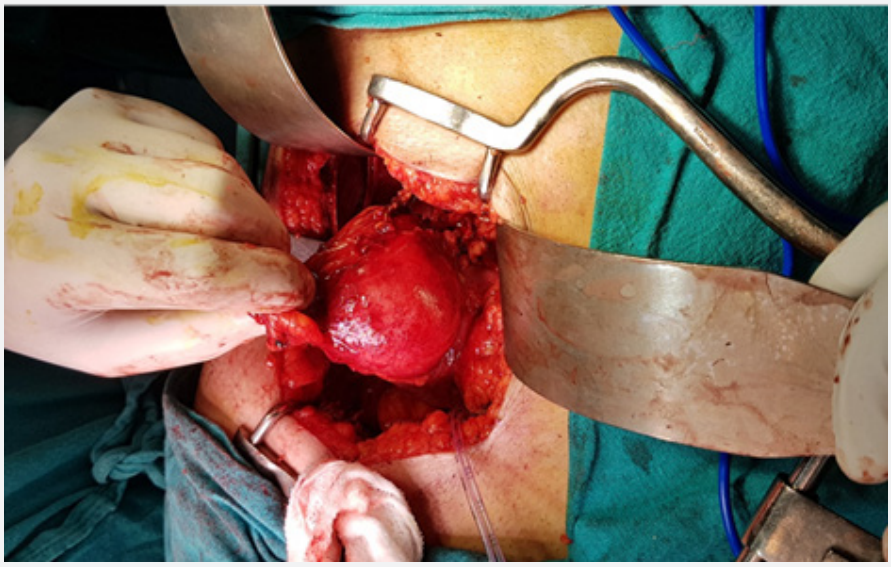

Figure 3

Conclusion

Renal hydatid cysts though rare may present with challenges. High index of suspicion must be kept in mind in case of space occupying lesion of kidney. The decision to operate and the technique to operate have no consensus and the decision depends on multiple factors. The decision to operate and the type of surgery is complicated by the size of cyst, number of cysts, the involvement of pelvis, ureter and the general condition of the patient. In any case, cyst rupture and dissemination should be avoided at all costs. The catastrophic events which can follow after complications may be avoided in the first instance.

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