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PRIMARY HYDATID CYST OF KIDNEY – A CASE REPORT

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ABSTRACT

Primary hydatid disease of renal system is rare. Echinococcal cysts are usually found in liver and lungs, but can affect any part of the body. Differential diagnosis of hydatid disease should be considered for every soft cystic mass in any anatomical location, especially in areas where the disease is endemic.Hydatid disease has a worldwide distribution and causes health problems in endemic countries. Hydatid disease is seen endemically among sheep raising communities. The disease still continues to be a serious problem in countries like Australia, New Zealand, Middle East, Africa, India, South America, Turkey and Southern Europe.

INTRODUCTION

Hydatid disease, which is a zoonotic infection caused by larval forms (metacestodes) of tapeworms of the genus Echinococcus found in the small intestine of carnivores, still remains an important health problem in endemic regions [1-2].

Two of the four recognized species of Echinococcus: E. granulosus and E. multilocularis, cause cystic echinococcosis (CE) and alveolar echinococcosis (AE) in humans, respectively. The eggs of these tapeworms excreted by carnivores may infect humans as natural intermediate host. Hydatid cysts, which generally involve the liver and the lungs, are uncommonly found in kidney; even in endemic zones. Here we present a case of hydatid cyst involving left kidney.

CASE REPORT

A 32 year male patient complaining of left sided flank pain and passage of small, pearly white balloon like grape size structures in the urine for past 15 days. He was admitted in the hospital and routine investigations were done and were within normal limits. USG showed a well-defined cystic lesion occupying the upper and mid pole of left kidney measuring 4 × 3 cm with multiple cysts of varying sizes and hyperechoic stroma [Figure 1]. CECT abdomen revealed a 5 × 4× 3 cm large, cystic lesion . It had multiple daughter cysts giving rise to a spoke wheel pattern. The cyst was noted in the upper and mid pole of left kidney. It was associated with a moderate left hydroureteronephrosis. Radiologically it was diagnosed as Hydatid cyst. The patient underwent left nephroureterectomy through the flank extra peritoneal approach.

Preoperatively, there was a large thick walled cyst in the upper and mid pole of the left kidney with a thick walled ureter. The resected specimen showed a large thick walled cyst with numerous daughters cysts in the kidney and the upper half of the ureter [Figure 2]. There is loss of normal architecture of the kidney. The histopathological examination [Figure 3&4] was consistent with right renal hydatid cyst with involvement of the ureter.

DISCUSSION

Renal hydatid cysts are usually multiloculated consist of single large cyst and smaller daughter cysts of varying sizes. multiple hydatid cysts in kidney were reported in literature [3].

Hydatid cyst wall is thickened with outer pericyte layer composed of fibrocollagenous lamellated chitinous layer and inner germinal layer with brood capsule and embedded hooklets. Renal pelvicalyceal system is dilated in most of the previously reported cases and microscopic hydatiduria is seen in 10–20% of renal hydatidosis [4].

Figure 1. Ultrasonography showing multiple cystic swellings of varying sizes.

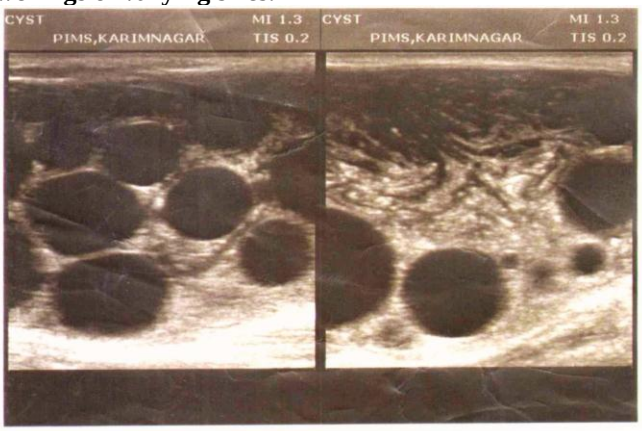


Figure 2. Gross showing nephrectomy specimen with multiple daughter cysts.[Figure a&b].

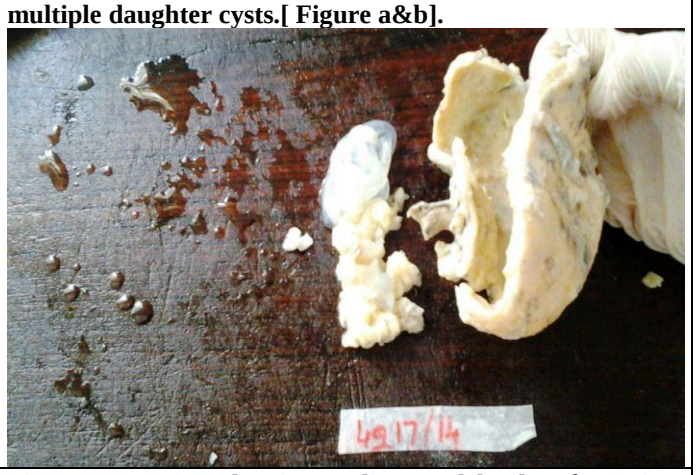


Figure 3. Section showing cyst wall comprising of outer chitinous and inner germinative layer along with scolices and hooks. Adjacent to these there is cellular eosinophilic laminated membranous structures seen. (X10 H&E).

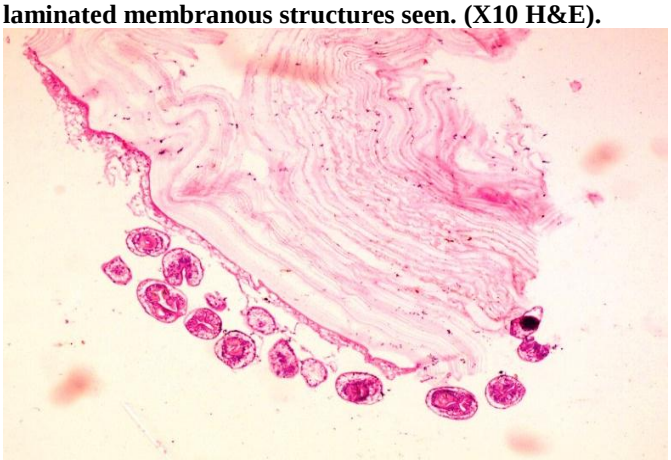
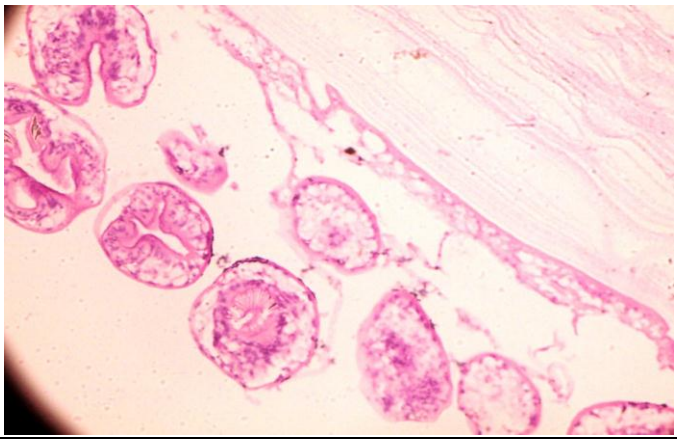


Figure 4. Section showing scolices and hooks of varying sizes (X40 H&E).



Echinococcosis is produced by the larval stage of the Echinococcus tapeworm, E. granulosus in this case. Echinococcus belongs to the order Cestoda and the family Taenia. It is about 5 mm long. The adult E. granulosus worm resides in the large bowel of foxes and dogs. Man is the intermediate host and gets the disease by ingesting vegetables and water contaminated by the affected dogs. Hydatid disease involves the liver in approximately 75% of cases and the lung in 15%. Secondary involvement due to hematogenous dissemination may be seen in almost any anatomic location. Kidney involvement is extremely rare (2-3%) [5,6].

Renal hydatid cysts usually remain asymptomatic for many years. It is not clear how the hydatid embryo reaches the kidney in cases of primary hydatid disease but it is postulated that it must pass through the portal system into the liver and retroperitoneal lymphatics. The hydatid cyst of the kidney is considered closed if all three layers of the cyst i.e. pericyst, ectocyst and endocyst are intact. When the cyst is no longer protected by the third layer i.e. pericyst or by the lining of collecting system it is considered to be an exposed cyst. If all the three layers of the cyst have ruptured resulting in free communication with the calyces and pelvis, it is called an open or communicating cyst. Cystic rupture into the collecting system, causing hydatiduria is pathognomonic, though seen in only 10-20% of renal hydatidosis and is usually microscopic.

In general, surgery is the treatment of choice in renal hydatid cyst. Kidney-sparing surgery (removal of hydatid cyst with pericystectomy) is possible in most cases (75%). Nephrectomy (25% of cases) must be reserved for destroyed kidney. Very few cases of laparoscopic removal of renal hydatid are reported. There is fear of cyst rupture and dissemination during dissection, entrapment and removal of the hydatid cyst during laparoscopy. Utmost care should be taken during the surgery to prevent spillage and resultant disseminated hydatidosis. Pre and postoperative one-month courses of Albendazole should be considered in order to sterilize the cyst, decrease the chance of anaphylaxis and decrease the tension in the cyst wall (thus reducing the risk of spillage during surgery) and to reduce the recurrence rate postoperatively. During

kidney-sparing surgery scolicidal solutions such as hypertonic saline should be used before opening the cavities to kill the daughter cysts and therefore prevent further spread or anaphylactic reaction. This case illustrates that echinococcal disease should be considered in the differential diagnosis of every cystic mass in any anatomic location, especially when they occur in areas where the disease is endemic. Surgical excision is the treatment of choice with postoperative combined treatment with Albendazole and Praziquantel to prevent recurrence.

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