

## Primary Retroperitoneal Hydatid Cyst: a Rare Case Report

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**Abstract-** Hydatid disease is a parasitic tapeworm infestation that usually involves liver and lungs. Primary retroperitoneal hydatid without liver and lung involvement is very rare. Surgery is the principle method of treatment for large retroperitoneal hydatid, whenever feasible. We report a case of primary retroperitoneal hydatid cyst in 29-year-old male patient.

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### Introduction

Hydatid disease in humans is caused by the cystic (larval) stage of the tapeworm *Echinococcus granulosus*, which is endemic to the temperate climate. Canines are the primary host. The life cycle of *E. granulosus* may also involve sheep, cattle, goats, and humans. This infection is transmitted orally via eggs shed in the feces of infected animals. Primary hydatidosis is common in the liver, spleen, and lungs (1-3). Theoretically, it can occur at any site except teeth, hair, and nails (4).

Primary retroperitoneal hydatid cyst is extremely rare and only occasional case reports have appeared since Lockhart and Sapinza (5) first reported this entity in 1958. Hydatid disease in extrahepatic locations usually remains asymptomatic unless the cyst grows and produces symptoms due to pressure, rupture to the pleural or peritoneal cavity, secondary infection, or an allergic reaction (6). Rarity of this entity and therefore the diagnostic dilemma created prompted us to report this case.

### Case Report

A 29-year-old male patient was admitted in our surgical department with a history of gradually increasing swelling in the right lumbar and groin area of 6 months duration. Patient also complained of dull aching pain in the same region of 3 months duration which was aggravated by walking and moving upstairs.

Past history was insignificant and systemic examination was normal. Local examination revealed a non tender fixed lump of about 10×12 cm in the right lumbar area extending down to right iliac fossa. Flexion of the right hip was restricted to some extent. Complete blood count, liver and kidney function tests were normal. ELISA for hydatid was suggestive. Plain X- ray abdomen did not show any specific diagnostic finding. Ultra sonography abdomen revealed a cystic lesion of 13×8 cm in the right iliac fossa. Contrast Enhanced CT scan abdomen revealed a large retroperitoneal cystic mass on the right side and pushing the psoas muscle anteromedially (Figures 1,2). There was no evidence of similar cystic lesion in liver, lungs or any other organ. Based on the clinical, serological and radiological evidence, a provisional diagnosis of retroperitoneal hydatid cyst was made.

Exploratory laparotomy revealed a large cystic lesion with laminated membrane in the retroperitoneum extending from the lower pole of the right kidney down to pelvis pushing the right psoas muscle and gut loops medially. Enucleation of the cyst was done observing the usual precautions and the residual cavity was drained externally by a tube drain (Figures 3-5). The patient had an uneventful postoperative recovery and the drain was removed after few days. Histopathological report confirmed the diagnosis of *Echinococosis*. Patient was discharged home on antihelminthics.

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**Figure 1.** Contrast Enhanced CT scan abdomen revealed a large retroperitoneal cystic mass on the right side and pushing the psoas muscle anteromedially



**Figure 2.** CECT abdomen revealed a large retroperitoneal cystic mass on the right side



**Figure 3.** Hydatid fluid being withdrawn from the cyst



**Figure 4.** Hydatid cyst in process of enucleation



**Figure 5.** Hydatid cyst enucleation near completion

## Discussion

Man is an accidental host in the life cycle of *Ecchinococcus granulosus* and usually proves dead end for the parasite. Human infestation occurs when the ova are swallowed. In the stomach, the outer protective coat of the ovum is digested, and the larvae are liberated. These penetrate the mucosa of the proximal bowel to enter the portal system. About 85-95% of the larvae are trapped in the liver, and the lung and only about 5-15% of them escape into the systemic circulation to involve other organs, mainly the muscles, the kidney, bone and brain (7). Retroperitoneal involvement was always thought to be secondary to rupture or spillage during surgery of liver hydatids. Primary retroperitoneal hydatid cysts without other organ involvement was first reported by Lockhart and Sapinza (5) in 1958, and till 1973, only 9 cases have been reported in the literature (8).

## Primary retroperitoneal hydatid cyst

Various modes of spread have been suggested to explain the escape of liver and lung involvement-via lymphatics (9) or via veno-venous shunts within the liver and in the space of Retzius (10). Dew (11) and Waddel (12) had favoured airborne transmission and direct implantation of the embryo in the bronchial mucosa as another possible mode of entry. This raises the possibility of an embryo of the parasite entering a venule after penetrating the bronchial mucosa and reaching the left side of the heart to involve other sites and thus bypassing the lung. But this remains largely theoretical and needs to be proved.

Radiography, USG and CT studies are important for the diagnosis of echinococcal disease. Plain abdominal X-rays may show calcifications of the cystic wall (13). Ultrasonography is the method of choice for the detection of hepatic and extra hepatic echinococcal cysts. CT confirms the diagnosis by revealing the presence of daughter cysts and plaque-like calcifications in the cystic wall. It is important as it provides information regarding the exact location of extrahepatic cysts in relation to neighbouring structures. CT sensitivity ranges from 90 to 97% (14,15).

Serological tests contribute to the diagnosis. Immunoglobulin G antibody detection by ELISA has a sensitivity of 95% and specificity of 94% (16). The sensitivity of indirect hemagglutination test has been found to be 87.5% (16,17).

Therapy for extrahepatic echinococcal disease is based on considerations regarding the size, location and manifestations of the cysts, and the overall health status of the patient. Asymptomatic small cysts once diagnosed can be treated with antihelminthic drugs, administered for 28 days in one to eight repeating cycles, separated by drug-free intervals of 2-3 weeks (18). This entity adds to the primary extrahepatic hydatid cysts reported (19). For symptomatic or large hydatid peritoneal cysts, surgery, when feasible, is the principal method of treatment. Surgical treatment can be either radical or conservative. Total cystectomy, whenever possible, is the gold standard.

The single most factors which prompted us to report this case in literature is that one must have a high index of suspicion and rule out hydatid cyst in every case of retroperitoneal cystic swelling under evaluation, especially in endemic areas, and therefore take adequate precautions to avoid a catastrophe like anaphylaxis. Excision of the cyst may not be possible always, because of dense adhesions and other vital structures around. Hence it is preferable to evacuate the parasite and excise the redundant portion of the pericyst leaving

the rest of the cavity open or to drain it externally with a wide bore drain.

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