Abstract:
Echinococcosis is an infestation caused in humans by the larval form of tenia echinococcus (E. granulosus). Humans are accidental intermediary hosts. The incidence of hydatid disease is 0.4100,000. Liver is the most commonly involved organ(75), followed by lungs (15). Kidney is rare and it comprises of only 23 of the total cases. Most cases are asymptomatic. We are presenting one such case of an isolated renal hydatid cyst.

Keyword:
Hydatid, Echinococcus, pericystectomy, nephrectomy

Introduction:
Hydatid disease is endemic in cattle and sheep raising regions of the world. Although hydatid disease is endemic in areas of well known geographical distribution, increased travel and migration have led to spontaneous occurrence in unexpected regions. The Echinococcal larvae penetrate the intestine to enter the blood stream and lymphatics, and travel to the liver, lungs and other organs. Direct invasion of the organs from an adjacent source may also occur. The larvae may reach the kidneys through the bloodstream, lymph glands or by direct invasion. The kidney is usually involved as part of disseminated disease and isolated renal echinococcus is uncommon.

CASE REPORT:
A 50-year-old female patient, resident of Chennai, presented with complaint of right lumbar region pain radiating to the back, with no history of dysuria, pyuria or haematuria. Physical examination revealed a mass occupying Rt. hypochondrium, rt. lumbar which is tender, firm, moves with respiration, bimanually palpable and upper border not palpable. Laboratory investigations revealed hemoglobin: 12.5 gm/dl, white cell count: 8000/mm3, neutrophils: 72%, lymphocytes: 19%, eosinophil 8%; platelets: 409000. Random blood sugar: 87 mg/dl, sodium: 143 mmol/L, potassium 3.9 mmol/L, creatinine: 0.7 mg/dl.
Figure 1 USG showing multiple cystic spaces
An abdominal ultrasound showed enlargement of the right kidney with multiple loculated cystic lesions within kidney (Fig 1). CT showed multiple cystic lesions (daughter cysts) without any calcification (Fig 2). Based on the Ultrasound and CT findings (mainly CT) we arrived at a diagnosis of Renal Hydatid. She was put on albendazole treatment regimen.

Figure 2 CT showing daughter cysts
Fig 3 Intra op findings

was performed and the specimen was sent for a pathological examination. The gross examination of the kidney showed a cyst which measured 16 x 8.5 cm. The cut section showed a multiloculated grey white cyst (Fig 3 and Fig 4). The microscopic examination revealed a fibro-chitinous cyst wall which was focally lined by granulation tissue which overlay on the compressed renal parenchyma, with dense chronic inflammation and interstitial fibrosis.

Figure 4 Post op showing daughter cysts

Discussion:
The usual presentation of renal hydatid disease is flank pain and mass. Hydatiduria\(^5\), the passage of grape skinlike debris in the urine is reported in up to 29% of cases and serology is positive in half\(^4\). Eosinophilia is detected in 20% to 50% of patients with renal hydatid disease. Negative serology does not exclude hydatid disease and positive serology does not confirm the diagnosis.
Ultrasonography usually demonstrates the typical appearance of an echinococcal cyst that may be unilocular or multilocular. The determination of daughter cysts, which is characteristic of hydatid disease, is also possible on ultrasonography. In this case, ultrasound showed multiple loculated cystic lesions within the kidney. Of radiologic investigations, CT has some advantages. CT scan shows cystic lesions, including wall thickening, calcifications and daughter cysts. Also, CT provides more detailed information about communication with the urinary tract and extrarenal disease. In this case, CT showed multiple cystic lesions (daughter cysts) without any calcification.

Histopathologically, there is an outer non-nucleated layer having laminations made up of many layers of gelatin. Outside this opaque layer is an inflammatory reaction that over a period of time makes a dense fibrous capsule. The daughter cysts develop from the inner germinal layer. These cysts eventually become leaky, resulting in sterile inflammation of the cyst or bacterial super infection. This causes shrinkage, fibrosis and eventual calcification of the cyst and destruction of the parasite structure, with only the pathognomic hooklet bearing degenerated scolices remaining intact amid the paste like yellow, cholesterol rich debris.

Conclusion:
Hydatid disease may present in unusual ways and lead to diagnostic difficulty and management problems. A high index of suspicion for hydatid disease should be maintained while evaluating complex cystic renal masses. Preoperative diagnosis is highly desirable and albendazole may be useful to prevent anaphylactic reactions and disease recurrence.

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References: