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Case Report

A case of isolated multiple hydatid cysts of spleen

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ABSTRACT

Isolated splenic hydatid disease is an extremely rare entity accounting for less than 3% of the total incidence of Echinococcosis. We present a case of 26yr female presenting with pain in the left hypochondrium and low-grade fever. CECT abdomen showed three loculated lesions in spleen features suggestive of hydatid cysts. She underwent splenectomy with a specimen that showed multiple splenic hydatid cysts. This case report highlights the rare presentation of isolated multiple hydatid cysts of the spleen and its successful diagnosis and treatment.

1. Introduction

Human echinococcosis caused by the larval stage of several species belonging to cestode genus *Echinococcus.* Humans are accidental dead-end hosts in the hydatid disease growth cycle. It's an public health problem throughout the Middle East, East Africa, South America where sheep and cattle are raised. Most commonly hydatid disease affects the liver (60–70%) and lungs (30%), with the kidney, spleen, bone being the least common. The clinical manifestation of a cyst differs depending on its anatomic location. The majority of hydatid cysts develop during childhood; however, it might take up to twenty years for the cyst to be diagnosed. Hydatid cyst development is slow yet consistent. Hydatid cysts grow two to three centimetres in diameter per year, according to a rough estimate. The pace of hydatid development appears to be influenced by the parasites' immunologic connection with people, as well as the enclosing structure's resistance. Even in endemic places, splenic hydatid illness is extremely uncommon, accounting for less than 3% of the total incidence of Echinococcosis.[1]

Splenic hydatid cyst was initially documented as an autopsy finding by Berlot in 1790.[2] Parasite passes through the two filters (hepatic and pulmonary), the spleen is often infected via the arterial pathway. There is also mention of a retrograde venous path that avoids the lungs and liver. Secondary infection, fistulisation to surrounding organs, and rupture into the peritoneal cavity are all possible consequences with a splenic hydatid cyst. Life-threatening complication include Systemic anaphylactic response which can occur when a hydatid cyst ruptures traumatically or spontaneously.

1.1. Case presentation

A 26yr female presented to our general surgery clinic with chief complaint of pain in left hypochondrium for 7 days. Pain was dull aching, mild to moderate in intensity, non-radiating and relived on iv medications. Patient also complained of low-grade fever for last 2 days. She had no history abdominal trauma, repeated infections, hematemesis, melena, significant weight loss. Her past medical history was unremarkable. On examination, her

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vitals were within normal range. Abdomen examination showed a soft cystic swelling in left hypochondrium, moving with respiration, spleen was not palpable separately from swelling and there was mild localised tenderness in left hypochondrium.

CECT abdomen was done which shows enlarged spleen. There were three well-defined loculated lesions in upper, mid and lower pole of spleen with hyperdense areas within likely hydatid cysts [Figure 1].

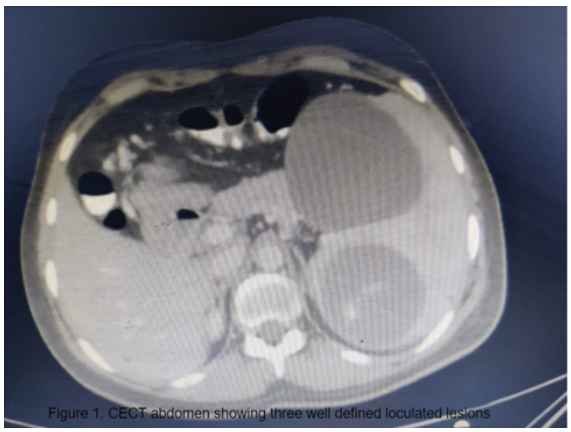

Fig. 1: CECT abdomen showing three well-defined loculated lesions

She had haemoglobin of 12.2 gm/dl and platelet count was 75k. Other blood investigations were within normal range. Hydatid serology was found to be negative. She was operated under GA and abdomen opened via midline laparotomy incision. Splenectomy was done, there were four cysts [Figure 2].

On histopathological examination largest cyst was 10cm in diameter with laminar wall thickness of 2-3mm showing eosinophilic, refractile and chitinous contents.Postoperative period was uneventful and patient was discharged on postoperative day 10.

2. Discussion

Hydatid disease is a severe public health issue that mostly affects sheep and cattle producers across the world. Even in the endemic region, splenic hydatid disease is an uncommon clinical illness. Abdominal hydatid illnesses are known to affect 0.5–4% of people. Liver (60–70 percent) is the most prevalent location of hydatid disease, act as first filter, and the lungs (10–40%), which serve as a secondary filter. Hydatid disease infect practically every organ. Isolated splenic involvement is even less common and only splenic hydatid cysts were found in our patient, with no pulmonary, hepatic, cerebral, or other tissue involvement. Through the arterial pathway, parasite eggs escape the liver-lung barrier and produce primary spleen infection. Splenic hydatid illness can also be caused by parasites spreading

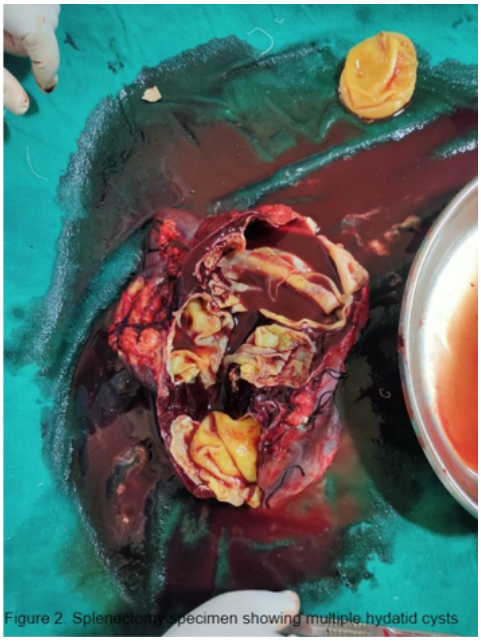

Fig. 2: Splenectomy specimen showing multiple hydatid cycts

retrogradely through the portal and splenic veins, bypassing the lung and liver. After a ruptured hepatic hydatid cyst, secondary splenic hydatid disease generally develops as a systemic diffused or intraperitoneal dissemination. The mature E. granulosus cyst consist of three layers, inner germinal layer, middle laminated layer and an advential layer. Both germinal and laminated layer together form endocyst. Compression of host tissue around endocyst produces a fibrous layer known as ectocyst. Splenic hydatid disease can manifest in a variety of ways. Splenic hydatid cysts are typically asymptomatic, slow-growing, and identified by chance. The condition is characterised by pain, abdominal discomfort and a palpable lump in the left upper quadrant.[3,4] Secondary infection, inflammation, and acute abdomen are the complications of an untreated splenic hydatid cyst. Other complications include direct compression of neighbouring structures or viscera, rupture into peritoneal cavity and fistula tract to the bowel. A splenic hydatid cyst perforated into the left colon, producing significant gastrointestinal bleeding, according to Teke et al.[3] Splenic hydatid cyst can also rupture into the thorax, resulting in a spleno-thoracic fistula.

Fever, pruritus, dyspnea, stridor has all been recorded as severe allergic responses caused by cyst rupture. Differential diagnoses for splenic hydatidosis include splenic abscesses, hematomas, pseudo cyst, neoplasms such lymphangioma and haemangioma. Preoperative diagnosis is made using help of serological tests and radiological investigations. Splenic hydatidosis can also be diagnosed using radiological methods such as conventional X-rays, ultrasonography (USG), CT, and MRI. Splenic hydatidosis is indicated

by marginal or crumpled eggshell-like calcifications in the splenic region on an abdomen or chest radiograph. The main diagnostic methods for splenic hydatid cyst are ultrasonography and computed tomography. Splenectomy is the standard treatment as Completeresection removes all parasitic and pericystic tissues.[5]

The numerous surgical procedures for treating splenic hydatid disease include total splenectomy, partial splenectomy, cyst enucleation, and deroofing with omentoplasty. For simple hydatid cysts of the spleen, a laparoscopic procedure has also been recommended. In the postoperative follow-up period, medical therapy is the mainstay of care. Medical treatment includes Antihelminthic drug therapy with Albendazole 10mg/kg twice daily with a meal in cycles of 6 weeks with 2 weeks between cycles to reduce the risk of anaphylactic shock and decrease the tension in the cyst wall. Gil-Grande et al.[6] reported that albendazole sterilizes up to 72.3% of cysts by the end of the first month and 94% at the end of 3 months of treatment. Patient should receive prophylactic vaccination against Streptococcus pneumoniae, Haemophilus influenza type b and Neisseria meningitidis either before splenectomy or after it".

3. Conclusion

Finally, the rarity with which it occurs makes splenic hydatid disease a difficult early diagnosis issue, especially in nonendemic places. All cystic masses in the spleen/(abdomen) should be evaluated with the differential diagnosis of hydatid disease, especially in geographical places where the illness is prevalent. The splenic hydatid cyst might be difficult to remove surgically. A thorough preoperative assessment should be carried out. The most sensitive examination for diagnosis is a computed tomography scan. Because of the variety of appearances, the anatomical relationships of a splenic hydatid cyst should be proven before surgery.

4. Informed Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

5. Source of Funding

None.

6. Conflict of Interest

None.

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