

Echinococcosis of spleen causing the displacement of left kidney: A case report

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ABSTRACT

Hydatid disease is a parasitic infection caused by the *Echinococcus* genus. Giant isolated splenic hydatid cyst is very rare in occurrence. In this case report, we present a 50-year-old female with a giant splenic hydatid cyst displacing the ipsilateral kidney and aorta from its normal position. The clinical, imaging and laparotomy findings are discussed.

Key words: Daughter cysts, Displaced Kidney, Echinococcosis of spleen, Hydatid disease, Hydatid of spleen, Splenectomy

Hydatid disease (echinococcosis) is a zoonotic infection caused by the larval forms of parasite tapeworm, *Echinococcus granulosus*. Humans are the accidental host. Dogs are definitive hosts. Infestation occurs on ingestion of food contaminated with the feces of infected animals. The liver is the most common site of infestation in the majority of patients (60-75%). The second most common site is the lung (10-25%). Other organs such as the spleen, kidneys, heart, bones, and brain are less frequently involved. Among abdominal hydatid cysts, splenic hydatid cysts are quite rare (2-3.5%) [1]. The primary and isolated involvement of the spleen is even rare. Berlet first described splenic hydatid cyst as an autopsy finding in 1790 [2]. Prompt treatment is mandatory as traumatic or spontaneous rupture may lead to life-threatening anaphylaxis. Splenectomy is the standard procedure for splenic hydatid cyst [3-8]. We report a case of giant primary splenic hydatid cyst in a 50-year-old-female patient managed by splenectomy.

CASE REPORT

A 50-year-old female homemaker presented to surgery outpatient department with chief complaints of dull aching pain in abdomen in the left hypochondriac region for 3 months. She had no other abdominal complaints. Her history and family history was unremarkable. She has a pet dog at home. Her general examination was within normal limits. Abdominal examination revealed palpable, cystic, nontender lump in the left hypochondrium extending up to umbilicus which was moving with respiration. Hematological and biochemical investigations were done and found to be within normal limits. Serological examination for hydatid was negative. C-reactive protein level was mildly raised.

Abdominal ultrasound and contrast enhanced computed tomography (CT) abdomen revealed a large lesion of dimensions of 21 cm × 17 cm × 10.9 cm in the spleen with peripheral cystic lesions. It also showed daughter cysts and some amount

of calcification in the center and along the wall. These features were suggestive of hydatid cyst of the spleen which was causing displacement of the left kidney (Figs. 1 and 2). All other abdominal organs were normal. Diagnosis of giant hydatid cyst of the spleen was made. Management options were discussed with the patient and in view of the grossly enlarged spleen, open abdominal exploration was planned.

The patient was vaccinated against pneumococcal and *Haemophilus influenzae* 3 weeks prior and oral albendazole treatment was given 1 week before surgery. Exploratory laparotomy was performed through rooftop incision (bilateral subcostal incision). Intraoperatively, there was a giant cyst occupying almost entire splenic parenchyma, only a small rim of splenic tissue was present at the periphery. As the cyst was occupying most of the spleen, decision of splenectomy was made and done. The cyst was adhered to the left diaphragm and omentum which was carefully separated (Fig. 3). The abdominal cavity was packed with freshly prepared cetrimide solution soaked mop. The abdominal drain was kept in the left paracolic gutter. The abdominal wall was closed in layers. Cut section of the cyst revealed multiple daughter cysts.

The drainage tube was removed on the 3rd post-operative day. The post-operative course was uneventful and the patient was discharged on the 10th post-operative day. Tablet albendazole was continued in a dose of 400 mg bid for 4 weeks. CT abdomen was done post-operative day 3 to look for the reversal of the position of the left kidney to its normal position (Fig. 4). Histopathology report was suggestive of hydatid disease of the spleen (Fig. 5).

DISCUSSION

Hydatid disease is common in sheep and cattle raising areas of the world, and it is public health problem in South and Central America, the Middle East, sub-Saharan African countries [9]. About 75% of all hydatid cysts are found in the liver which acts



Figure 1: (a and b) Giant hydatid cyst of spleen

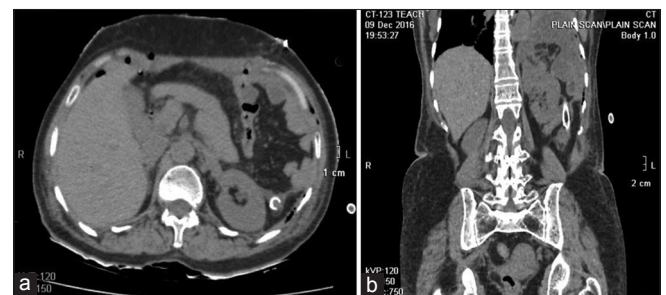


Figure 4: (a and b) Computed tomography abdomen done post-operative day 3 showed that the kidney was restored to its anatomical position

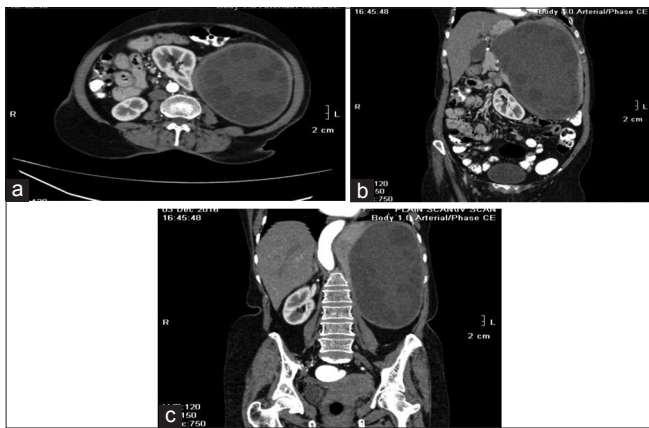


Figure 2: (a-c) Hydatid cyst of spleen displacing the ipsilateral kidney and aorta from its normal position

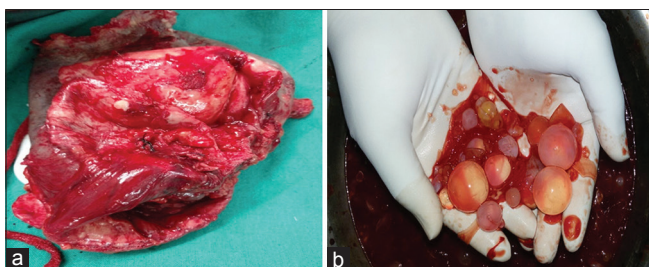


Figure 3: (a and b) Specimen of spleen with cyst and multiple daughter cysts

as a first filter. The lungs act as a second filter and pulmonary hydatid cysts account for 10-40% cases [10]. Primary involvement of the spleen usually takes place by the arterial route. A retrograde route through portal venous circulation which bypasses the lung and liver filters also reported [11]. Medical therapy for echinococcosis is limited to mebendazole and albendazole which is only 30% successful. As mebendazole is poorly absorbed and is inactivated by the liver, albendazole is the drug of choice for medical therapy. Greater success rates may be seen in extrahepatic manifestations of the disease and with the alveolar form caused by *Echinococcus multilocularis*. Given for at least 3 months preoperatively, albendazole reduces the recurrence rate when cyst spillage, partial cyst removal, or biliary rupture has occurred. Duration of therapy in these cases is at least 1 month [12]. The main problem in the diagnosis of splenic hydatid disease is in differentiating it from other splenic lesions that have same appearances on ultrasonography and CT of the abdomen. The differential diagnosis includes epidermoid cyst, large solitary abscess, or hematoma, intrasplenic pancreatic pseudocyst and cystic neoplasms of the spleen.

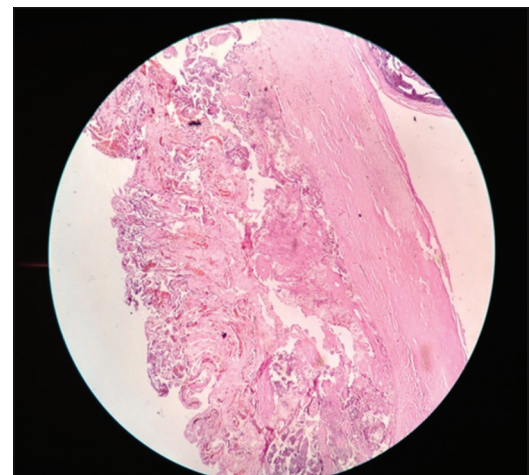


Figure 5: Histopathology report - hydatid cyst of spleen

The diagnosis of splenic hydatid cyst is based on history narrated, geographic backgrounds, physical and systemic examination, radiological imaging studies, serology, fine-needle aspiration cytology, and histopathological examinations of resected cysts. Serological tests are used for helping in diagnosis of the disease. ELISA gives a positive result in more than 90% of the patients. Specific immunoglobulin E antibodies are demonstrated with ELISA. The radioallergosorbent test is done to see if an active disease is present. The ARC5-ELISA antibody test gives positivity up to 91% [13-15].

The gold standard treatment for splenic hydatid disease was splenectomy. However, past few decades have shown a tendency toward splenic conservative surgery in few suitable cases to decrease opportunistic post-splenectomy infection [16]. During splenic hydatid cyst surgery, care should be taken to avoid spilling the contents of the cyst. Intraoperatively, the lesions can be sterilized by instilling 3% sodium chloride solution. If intraperitoneal spillage occurs during the dissection, anaphylactic hypotension may occur. Laparoscopic and percutaneous treatments have not been widely accepted in treating hydatid cyst because of a traditional fear of spillage and anaphylaxis. After surgery, albendazole treatment is necessary to ensure complete recovery.

CONCLUSION

In our case, the patient had a huge hydatid cyst of the spleen which displaced the ipsilateral kidney and aorta from its normal

position. Cyst involving almost the whole spleen was not salvageable; hence, the decision of splenectomy was taken. Patient postoperatively had a complete relief of symptoms suggesting a successful operative outcome.

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