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Primary splenic hydatidosis

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Abstract

Hydatid disease is becoming a public health problem in Nepal. Majority of the patients have hydatidosis of liver and lungs. Primary splenic hydatidosis is rare. The clinical presentation of primary splenic hydatidosis is similar to other cystic splenic pathologies. It presents with slow growing, dull aching left upper quadrant abdominal lump. Ultrasonography and computed tomography scans are helpful in diagnosis. We report a 36 years lady with primary splenic hydatidosis, who successfully underwent open en bloc resection of hydatid cyst along with total splenectomy.

Keywords: primary splenic hydatidosis, splenic hydatid cyst

Introductions

Hydatid disease (HD) is a widespread zoonotic parasitic disease worldwide. The indigenous epidemiological cycle of *Echinococcus granulosus* parasite is a dog-pig-dog cycle. Humans acquire this infestation accidentally through infected dog stool.¹ Hydatidosis is most frequently found in liver and lungs and rarely encountered in the kidneys, spleen, bone, thyroid, breast and pancreas.² Although spleen is the third most common organ involved, the global incidence of primary splenic hydatidosis is rare at 0.5-4%.^{2,3} Primary splenic hydatidosis was first described in 1790.^{2,4} We report a rare case of large splenic HD successfully managed surgically.

Case Report

A 36 year lady, farmer from Gorkha district presented to surgical outpatient department (OPD) with a gradually increasing left upper quadrant mass for three years. There was dull aching pain over the lump, which gradually increased in intensity. She had no history of contact with pets. There was no history of jaundice, cough, respiratory distress, abdominal trauma or weight loss. Her past medical history was unremarkable.

She was of average built. Vital parameters were normal at presentation. Abdomen showed left upper quadrant fullness. There was non-tender, firm, cystic i ntra-abdominal lump of 15x10 cm size extending up to the umbilicus with smooth surface and edges. Overlying skin was normal. There was no hepatomegaly and spleen could not be palpated separately. There was no peripheral lymphadenopathy. Other systems were clinically normal.

Routine laboratory investigations were normal, other than raised erythrocyte sedimentation rate (ESR) of 38 mm/hour. Chest radiograph showed elevated left hemi diaphragm. Abdominal ultrasonography (USG) revealed a 20x20 cm intra-peritoneal cystic lesion in left hypochondrium, displacing major vessels posteriorly. The USG suggested mesenteric cyst or hydatid cyst.

Contrast enhanced computed tomography (CECT) of abdomen and pelvis reported a well-defined intra-abdominal cystic lesion measuring 19x16x15 cm in left upper quadrant with thick laminated wall displacing the dome of left hemi diaphragm superiorly and the left kidney inferio-posteriorly. Thin rims of enhancing splenic parenchyma was noted around the cyst. Other abdominal viscera were normal. The IgG enzyme-linked immunosorbent assay (ELISA) for *E. granulosus* was negative. Albendazole 400 mg

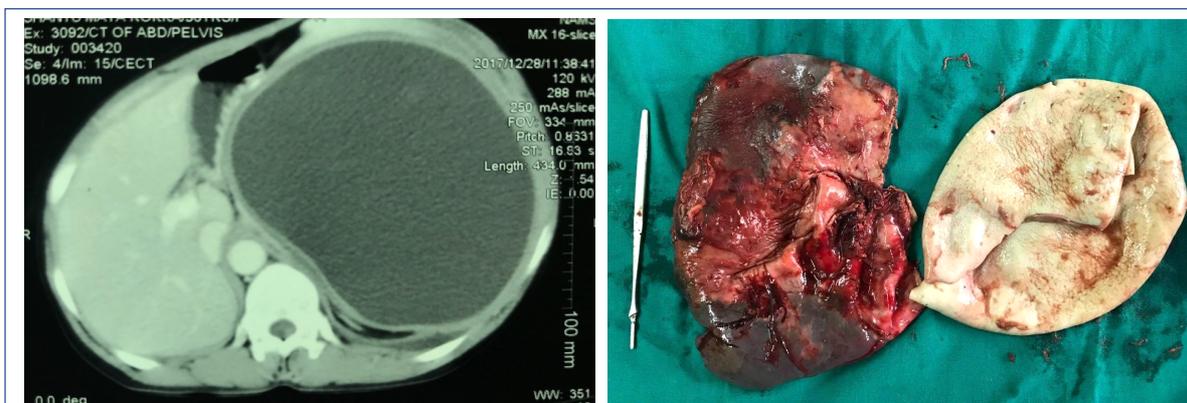


Figure 1. Abdomen CECT showing primary hydatid cystic of spleen in a rural farmer women of 36 years

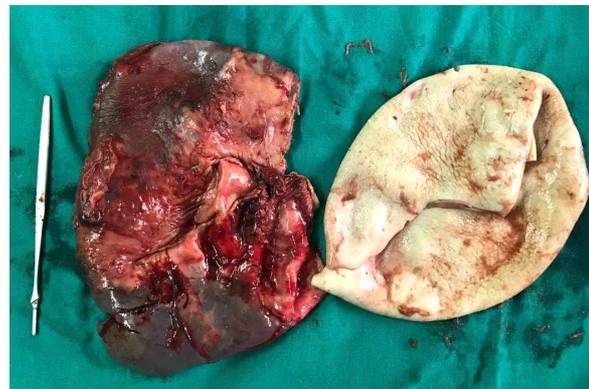


Figure 2. En block resected primary hydatid cystic along with total splenectomy

orally twice a day was given for two weeks and vaccination for Hemophilus influenzae, Neisseria meningitidis, and Streptococcus pneumoniae were given two weeks prior to elective surgery.

Exploratory laparotomy revealed a 5-8 mm thick walled intra-abdominal cyst of size 20x20x18 cm, occupying entire splenic parenchyma. It was firmly adherent to left hemi-diaphragm and abdominal wall, and contained 2200 ml of watery clear fluid without daughter cyst. Cyst was compressing left lobe of liver, kidney and stomach to midline. Rest of the abdominal organs including the liver were normal.

Povidone iodine solution (10%) was used as scolicidal agent. The splenic vessels were secured. Cyst was resected en bloc including the attached thin rim of remaining spleen. The operating time was 155 minutes. Intraoperative blood loss was about 400 ml.

Histopathological examination showed the classic laminated cyst wall encircling many scolices with a double layer of hooklets; confirming *E. granulosus* infection.

Postoperatively, the patient recovered well without complication. She was discharged on 5th postoperative day on oral albendazole 400 mg twice a day for three weeks. The patient was followed for 32 weeks. There was no immunological and sonological evidence of recurrence.

Discussions

This kind of huge capacity (2200 ml) and size (20x20 cm) of primary solitary hydatid cyst of spleen has not been reported locally. Although HD is found in almost all locations of the human body, it is most frequently seen in the liver (50-77%), the lungs (15-47%), the spleen (0.5-8%), and the kidneys (2-4%).⁵ Primary infestation of the spleen by *Echinococcus* usually takes place via arterial route, but retrograde venous route have also been reported in conditions like portal hypertension and increased intra-abdominal

pressure.² Splenic hydatidosis are usually solitary slow growing and incidentally diagnosed. Presentations are usually due to secondary symptoms. Similar to our patient, a study on 38 cases reports abdominal pain was the presenting complaints.⁶

Diagnosis can be challenging. Due to similarity in clinical presentation and radiological findings with other more commonly encountered cystic lesions of the spleen, preoperative diagnosis of primary splenic hydatidosis is difficult. It should be differentiated from relatively common non-parasitic cystic pathology like dermoid, epidermoid or epithelial cysts, splenic abscesses, hematomas, post-traumatic pseudo cyst and cystic hemangiomas or lymphangiomas by combining radiological findings of USG, CT and magnetic resonance imaging (MRI). Eosinophilia and raised ESR (38 mm/hour in our case), may be suggestive. Similarly, Casoni skin test is sensitive but not specific and rarely done. Serology ELISA for detection of antibodies serves as an adjunct.⁷ This was negative in our patient.

Regardless of the options of surgeries, scolicidal agent (for e.g. 10% Povidone iodine solution in our case) must be used to kill scolices. Caution must be taken to avoid spillage of the cyst content by wrapping scolicidal soaked gauze around the cyst to prevent dissemination. Percutaneous treatment of splenic hydatidosis in outpatient setting using Örmeci technique is safe, effective and economically promising alternative.⁸ Total splenectomy is the preferred procedure for primary splenic hydatidosis, especially when it is large, multiple, and symptomatic with central or hilar location. Other procedures like partial splenectomy, cyst enucleation and de-roofing with omentoplasty have increased rate of postoperative infection and recurrence.⁹ Due to scanty splenic parenchyma, we performed en block resection of the cyst with total splenectomy. Laparoscopic approach is increasingly used as a safe and effective option for splenic hydatidosis in recent years.¹⁰

Conclusions

Primary splenic hydatidosis is rare. It presents mainly with dull aching abdominal lump. Abdominal ultrasound and CT scan helps in diagnosis. Total splenectomy is method of choice to prevent complications and recurrence when splenic parenchyma is scanty.

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