

Case Report

A Patient with Chronic Lumbar Pain Diagnosed as Giant Calcified Splenic Hydatid Cyst

AKMS Alam¹, MM Hossain², SK Biswas³

Abstract:

Hydatid cyst is a zoonotic disease, caused by *Echinococcus Granulosus*, mostly found in sheep rearing area of the world but not commonly found in our country. Hydatid disease commonly affects the liver and less frequently the lungs and other organs. Among them splenic hydatid disease has been reported to be 0.5-4%. Here we report a case of a giant calcified splenic hydatid cyst presented with only chronic lumbar pain. A 45 year old female presented with left lumbar pain for the last 1 year. She had no other complaint. She had no pet dog or sheep at home. Physical examination showed no abnormality. A computerized scan revealed a mass in the spleen with round calcification at its margin measuring 7.56×7.96 cm in diameters. Indirect haemagglutination (IHA) for hydatid disease test was negative. Complete blood count, renal and liver function tests were within the normal limit. The patient was clinically diagnosed as splenic hydatid disease and managed by splenectomy after proper immunization. There was a hard calcified mass involving almost whole of the spleen, only thin rim of splenic tissue was present in superior surface. The rest of the abdominal organs including the liver were normal. Total splenectomy was done. Post operative period was uneventful and the patient was discharged on 12th post operative day. Histopathology confirmed the diagnosis of hydatid disease. The patient was followed up for two years without any further development of hydatosis in any organ.

Key words: Calcified cyst, Hydatid disease, Spleen.

Introduction:

Hydatid disease is found in almost all over the world but is endemic in southern half of South America, Australia, New Zealand, France and certain areas of the USA and the UK¹. It is not common in our country. A larval form of the tapeworm named *Echinococcus Granulosus* causes hydatid disease. Dog and their related species are the usual definitive host; sheep, goats or swine are intermediate host and humans are secondary or incidental host. Humans become infected by ingesting vegetables or water contaminated by dog or more directly by handling the parasite infested dogs as pets¹. In the human duodenum, the hatched out embryo penetrates through the mucosa and enters into circulation and lodged in various organs where it forms

hydatid cyst. The cysts are located in liver in 75% of cases, lungs in 15% of cases, and other organs in 10% of cases². Among abdominal hydatid cysts, splenic hydatid cyst is a rare entity, even in endemic countries^{3,4,5}. Worldwide incidence of splenic hydatid is 0.5-4%^{6,7}. Here, a patient with lumbar pain due to a giant calcified splenic hydatid cyst is presented.

Case report:

A 45-year-old female, housewife, hailing from cumilla presented with left lumbar pain for the last 1 year. The pain was intermittent, dull aching in nature and did not shift or radiate. There is no aggravating factor but relieved by NSAID and sometimes spontaneously. She had no other complaint. Her bladder and bowel habit was normal. She had no pet dog or sheep at home. She was not anaemic and non icteric. Abdominal examination showed no abnormality. Abdominal ultrasonography revealed a large lesion with mixed echogenic component in the spleen with calcification in its wall. We suspect the diagnosis of calcified splenic hydatid cyst from this ultrasonography report. Other organs were normal and no other cystic lesions were found anywhere in abdomen on ultrasonogram. Laboratory results showed an erythrocyte sedimentation rate of 15 mm at the end of 1st hour. Indirect haemagglutination (IHA) for hydatid disease test was negative. In addition to renal and liver function

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tests, a hemoglobin level, a total leukocyte count and differentiation were found to be within the normal range. A plain radiography of KUB region showed a round calcification in front of the 11th thoracic to 2nd lumbar vertebrae (figure 1). A computerized scan revealed a medium sized (7.53 x 7.96 cm), hypo to isodense (10-15 HU), and almost rounded lesion in lower part of spleen with calcific wall around it. Post contrast scans revealed no significant enhancement, there were no cysts in other abdominal viscera; suggestive of old hydatid cyst of spleen (figure 2). The patient was diagnosed as splenic hydatid disease and was treated conservatively for three months by analgesics and proton pump inhibitor but her symptom did not improve and we decided to manage surgically after proper immunization. Preoperative anti helminthic was not given as CT and IHA suggested old calcified cyst. Patient was explored through left subcostal incision. There was a hard calcified mass involving almost whole of the spleen, only thin rim of splenic tissue was present in superior surface. Aspiration could not be possible due to hard calcification. The rest of the abdominal organs including the liver were normal. Total splenectomy was done. Post operative period was uneventful and the patient was discharged on 12th post operative day. Histopathology confirmed the diagnosis of hydatid disease. The clinical and ultrasonography follow-up did not show any evidence of recurrence at two years.



Figure-1: A plain radiography of KUB region showed a round calcification in front of the 11th thoracic to 2nd lumbar vertebrae.

Discussion:

Hydatid disease is found in almost all over the world but is a major health problem in farming area. It is endemic in cattle-rearing areas of South America, Africa, Middle East, South Europe, India, and Australia. Four species of *Echinococcus* cause infection

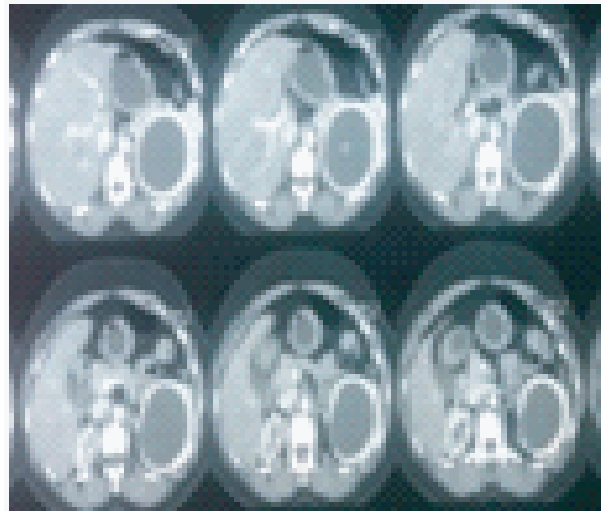


Figure- 2: A medium sized (7.53 x 7.96 cm), hypo to isodense (10-15 HU), almost rounded lesion is seen in lower part of spleen with calcific wall around it. Post contrast scans reveals no significant enhancement; suggestive of old hydatid cyst of spleen.



Figure-3: Resected specimen showed large calcified cyst with thin rim of compressed spleen.

in humans; *Echinococcus granulosus* and *Echinococcus multilocularis* are the most common, causing cystic echinococcosis (CE) and alveolar echinococcosis (AE) respectively⁸⁻¹⁰. The two other species, *E. vogeli* and *E. oligarthrus* cause polycystic echinococcosis and are less frequently associated with human infection. *E. granulosus* are usually found in dogs or other canids. *E. multilocularis* are usually found in foxes, other canids, or occasionally in cats^{11,12}.

Dog and their related species are the usual definitive host, sheep goats or swine are intermediate host and humans are secondary or incidental host. Humans become infected by ingesting vegetables or water contaminated by dog or more directly by handling the parasite infested dogs as pets¹. In the human duodenum, the hatched out embryo penetrates through the mucosa and enters into circulation and lodged in various organs where it forms hydatid cyst². The most common sites are liver (60-70%) and lungs (10-40%)⁶. Spleen is the third commonest site for *Echinococcus*¹². Among abdominal hydatid diseases the frequency of splenic hydatid disease has been reported to be 0.5-4%¹¹. Possible routes of primary hydatid of spleen include arterial route after passing through liver and lungs. Another route is the venous route through portal circulation bypassing liver and lungs. Secondary hydatid of spleen usually follows systemic dissemination or intraperitoneal spread following ruptured hepatic hydatid cyst¹². The hydatid cyst consists of three layers. The outermost adventitia (pseudo cyst) is formed of compressed splenic tissue, a middle layer laminated membrane of friable ectocyst and an innermost germinal layer, endocyst. Cyst wall may contain calcifications, may be surrounded by either a fibrous capsule or granulation tissue including inflammatory infiltrate. Presence of scolices in the cyst fluid confirms the diagnosis. Splenic hydatid cyst has got various presentation, mostly are asymptomatic and incidentally diagnosed. Abdominal discomfort, pain and palpable mass in left hypochondriac region are the main presenting symptoms. Tarccoveanu E. reported 38 cases of splenic Echinococcosis and abdominal pain was the most common symptom among these patients⁹. Most common differential diagnosis of splenic hydatid cyst are calcified primary cyst of the spleen, splenic abscesses, epidermoid cysts, lymphangioma, haemangioma and post-traumatic pseudo cyst. Pre operative diagnosis can be done by haematology, radiological and some serological investigations. Sometimes eosinophilia is the only finding on haematological investigation. At present, ultrasonography and CT are the most valuable imaging techniques for the diagnosis and evaluation of focal splenic diseases¹³. CT has a higher sensitivity than ultrasound, with sensitivity rates of 95-100%^{14,15}. Several immunologic tests may also help in the diagnosis, although laboratory data are sometimes uncertain; hepatic hydatosis is reported to be confirmed in 80-94%, but extra hepatic hydatosis only in 65% of cases, even when the immunologic tests are based on multiple methods^{16,17}. Imaging when combined with serological tests such as ELISA, immunoelectrophoresis, or indirect hemagglutination test can lead to successful diagnosis of splenic hydatid in 90% of the cases¹⁸. Treatment includes Splenectomy, Splenic preserving surgery, cyst enucleation and

deroofting with omentoplasty in open or laparoscopic techniques. Splenectomy and complete removal of the cyst is the treatment of choice due to the high risk of rupture. Literature favors total splenectomy in larger cysts, because the splenic parenchyma is significantly reduced due to pressure atrophy and thick fibrous membrane, as seen in hepatic hydatid cysts, is quite thin and fragile in splenic hydatid cyst, so risk of intraoperative rupture is high in such cases if conservative approach is adapted during surgery²¹. Splenic preserving surgery has the benefit of avoiding the lifelong risk of the potentially fatal overwhelming post splenectomy sepsis (OPSI) but carries a risk of poor vascular control when incising the splenic tissue⁶. Post splenectomy patients have a lifetime risk of 5% for developing OPSI, which carries a mortality of 38-69%¹⁰. Medical management by albendazole is used only as adjuvant therapy and in the treatment of postoperative follow-up period. Using albendazole for one week to one month before surgery may kill or reduce the activity of Echinococcus larvae. Continued use of albendazole for 3 months after surgery may also reduce recurrence². Percutaneous management which consists of aspiration, injection of scolicidal agent and reaspiration, has proved to be safe and effective in small studies, but concerns remain about possible risks of fluid dissemination and fatal anaphylactic reaction¹⁹⁻²¹. Using of scolicidal agent like hypertonic saline or 0.5% silver nitrate solutions before opening the cyst cavity helps to kill the daughter cysts.

Conclusion:

In conclusion, although in general practice lumbar pain is an atypical presentation of splenic hydatid cyst, hydatid disease should be included in the differential diagnosis of abdominal calcification, particularly in endemic region.

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