

Asymptomatic Infected Hepatic Hydatid Cyst: An Unusual Presentation

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Abstract

Hydatid cyst disease is a common worldwide zoonosis. Most of the cysts are located in the liver. Abscess formation due to infection of the hydatid cyst is an important complication. Pyogenic hydatid cyst of liver are extremely rare. We report a case of solitary, hydatid cyst in the liver with secondary infection. A 14-year-old female was admitted to our hospital with chief complaints of abdominal pain in the right upper quadrant and loss of appetite. Physical examination revealed a mass filling the right-upper quadrant. Diagnosis was made of hydatid cyst was on the basis of ultrasonography and computed tomography. Course of 21 days of albendazole was given preoperatively and patient was taken for surgery. During operative procedure on opening the cyst cavity, about 1 litre of pus came out along with daughter cysts, biliary communication was not found and pericystectomy was done. Patients condition improved and was discharged on 8th post-operative day.

Keyword: Hepatic Hydatid Cyst; Pericystectomy; Abdominal pain.

Introduction

Hydatid cyst is a parasitic disease which is distributed worldwide. Seventy five percent of all hydatid cysts are hepatic. Patients may remain

asymptomatic for years and usually present with nonspecific complaints. However any hydatid cyst at any time can undergo any complications which can be life threatening unless treated early.¹ Although hepatic hydatid cysts can be treated by surgery,^{1,2} chemotherapy,³ percutaneous aspiration,^{4,5} surgery still remains the mainstay of treatment. For entire spectrum of disease surgery is the only treatment which is applicable.⁶

Case report

A 14-year-old female was admitted to the Shaheedhasan khan mewatigovernment medical college, nalhar, nuh, haryana with complaints of loss of appetite and right upper quadrant abdominal pain. Patient was afebrile with pulse rate of 86 beats/min, respiratory rate of 20 breaths/min and blood pressure of 110/70 mm Hg. Abdominal examination revealed a mass filling the right-upper quadrant and extending down to umbilicus.

Laboratory findings were as follows: total white cell count 7400 cells/cu mm, haemoglobin 9.7g/dL, platelet 1.68 lakh/cu mm, blood urea 43.3mg/dL, creatinine 1 mg/dL, aspartate aminotransferase 120U/L, alanine aminotransferase 87.2U/L, alkaline phosphatase 2344.3 U/L, total bilirubin-0.8 mg/dl, bilirubin conjugated-0.5 mg/dl, bilirubin unconjugated-0.3 mg/dl and absolute eosinophil count- 296/cumm. Ultrasonography (USG) of the abdomen revealed multiple cysts of variable sizes in liver largest of size 78 mm.

Computed tomography (CT) was suggestive of large multiloculated cystic lesion with

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peripheral calcification seen in segment 4a and 4b of liver measuring approximately $15.3 \times 11.4 \times 14.5$ cm (Fig. 1). The lesion was displacing the portal confluence and right and left portal veins posteriorly. Liver was enlarged in size and measured 21.57 cm in craniocaudal axis (Fig. 2).



Fig. 1: Large multiloculated cystic lesion with peripheral calcification seen in segment 4a and 4b of liver.



Fig. 2: Lesion was displacing the portal confluence and right and left portal veins posteriorly. Liver was enlarged in size and measured 21.57 cm in craniocaudal axis.



Fig. 3: Opening the cyst about 1 litre of frank pus came.



Fig. 4: Pericystectomy was done along with Cholecystectomy.

Pericystectomy was done along with cholecystectomy. Pus was sent for culture and sensitivity. Intravenous ceftriaxone 1g and metronidazole 500 mg were given post-operatively the drain removed on 6th postop day and was switched to oral antibiotic thereafter. Patient was discharged on 8th post-operative day in satisfactory condition.

Discussion

Liver Hydatid cysts are usually asymptomatic but sometimes severe complications and even death

can occur due to the rupture of the cyst. Small cysts which are calcified and lesions which are serologically negative can be followed up without any surgical intervention.⁷

The cyst-bearing lobes can be atrophied because of the pressure effect of cyst itself, or its pressure on portal vein or biliary channels. Liver abscesses can be the presentation of hydatid cyst once it get infected. Percutaneous puncture of such infected cyst may lead to intraperitoneal dissemination of the infection so its diagnosis is very important and puncture of such infected cyst should be avoided. Surgery remains the treatment of choice for hepatic

hydatid cyst with complications that is primary and secondary suppuration.⁸

Specific management and long-term outcome of primarily infected hydatid cyst of the liver has not been evaluated extensively. This complication has been reported in the literature as occurring in about 5% to 40% of patients.⁹ Most of primarily infected hydatid cyst are discovered intra-operatively because history of travel to an endemic area and presence of eosinophilia are not very much impressive in most of the cases. Often symptoms and signs are not specific and severe disease may occur followed by benign course.

A number of factors are thought to be responsible for benign clinical presentation of hepatic hydatid cyst in some patients like small cystobiliary communications that leads to partial decompression of cyst, low virulence of the infectious agent and presence of pericyst, which prevents the spread of infection to the liver parenchyma. Most characteristic clinical manifestation are- pain right upper quadrant of abdomen along with fever. In hydatid liver abscesses number of abnormal laboratory findings may be found. The nonspecific white blood count elevation is usual and the sensitivity of eosinophilia or specific serological tests is low due to dead parasite, reduced absorption of the antigen, and impaired immune reaction.¹⁰

Various imaging techniques are used for differential diagnosis of hydatid cyst. Chest or/and right upper quadrant X-ray films or isotopic scanning are valuable diagnostic tools. Presence of hepatic calcification, right pleural effusion, atelectasis, elevated hemidiaphragm or right upper-quadrant air-fluid level on plain X-ray are some of the non specific findings of hepatic hydatid cyst. Liver scans are useful (sensitivity varying from 80% to 97%), but the etiology of the liver image filling defect can not be assessed with liver scan.

More recently, USG (sensitivity 85% to 95%), CT (sensitivity 95%) and Magnetic resonance imaging (MRI) have been utilized. Depending on the user experience and technique, diagnostic accuracy of ultrasound reach close to 90%. This is presently the screening method of choice, due in part to accessibility even in small, rural medical centers, cost containments, and portability of the device.¹¹ Ultrasound is not only helpful for diagnosis, but also useful in post-treatment monitoring. On Ultrasonography hydatid cyst can be seen as cystic lesion or solid appearing pseudotumors.

Daughter cysts and water lily signs are characteristic signs of hydatid cyst but they are

not always present. Calcification can also be seen. Calcification can cause death of hydatid cyst, but calcification does not always mean that the cyst is dead.¹² CT features of hydatid cyst are; well-defined, hypoattenuating lesion with a distinguishable wall. For better demonstration of the pericyst, matrix, and daughter cysts MRI is better option than CT because of its better resolution on both T1 and T2 images.

Most of the times primarily infected hydatid cysts, present as typical liver abscesses but sometime presence of peripheral calcification can reveals the diagnosis. During preoperative period imaging techniques are used for evaluation of extra hepatic disease, detailed hepatobiliary anatomy and rupture of a cyst. These techniques are also useful in the post-operative follow-up. Open surgery remains the treatment of choice for the primarily infected hydatid cyst of the liver.¹³

During exploration, avoid spillage, inactivate/sterilize the cavity, and select the appropriate management of the residual cavity. Depending on number of cysts, location of cysts, and their connection with adjacent structures surgical approach can be transperitoneal or retroperitoneal. Whatsoever be the approach, incision should be lengthy enough, so that whole of the hepatobiliary system and its surrounding structures can be dealt easily through this single incision.

During exploration it is advised to first aspirate the cyst and that too at its most superficial point, in closest proximity of liver capsule. Explanation for this aspiration is that by doing this we are preventing the exposure of healthy liver tissue to infective purulent material. Since the introduction of antibiotics/scolicidal, the improvement in surgical techniques and the management of seriously ill patients, the transperitoneal approach has become the gold standard, as it gives the additional advantages of being able to drain all infected hydatid cysts, irrespective of size and location within the liver, and of allowing a thorough exploration of the abdomen.

For appropriate exposure of biliary tract, common bile duct and for incidental cholecystectomy, which sometimes can be required, abdominal approach is best suited. For management of "difficult" encapsulated abscess cavities and to demonstrates the most direct route for puncture wide exposure of diseased part is a rule. Based on the existing literature and on our own experience, there is a relative diagnostic and treatment algorithm preoperatively and post-operatively.

Localized inflammatory process causes minimal signs and symptoms which make the diagnosis of primarily infected hepatic hydatid cyst extensively difficult. A lengthy incision is used in most of the open surgical exploration of hydatid cyst because it avoid healthy liver tissue to come in contact with infected purulent material. External drainage of the infected cyst should always a priority of surgeons while carrying an exploration of cyst. With early diagnosis, proper use of chemotherapeutic agents and attentive perioperative management the outcome of surgical treatment can be improved.

Since the chances of anaphylaxis and peritoneal seedling are more with PAIR or laparoscopic surgery so open surgery is still the main treatment modality for managing a complicated hydatid cyst.

Conclusion

Complications occurring in hydatid cyst are responsible for its clinical presentation otherwise, even being a worldwide zoonosis, it mostly remains asymptomatic. It is rare for he infected hydatid cyst to remain asymptomatic.

Surgery, chemotherapy, PAIR are the treatment options available for hepatic hydatid cyst but surgery is the management of choice for infected hydatid cyst.

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