Intraperitoneal Rupture of Hepatic Hydatid Cyst Following Blunt Abdominal Trauma

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ABSTRACT

Peritonitis due to rupture of liver hydatid cyst secondary to blunt abdominal trauma can present with fatal consequences. Timely diagnosis and appropriate surgical management can be life saving. We report a case of ruptured liver hydatid cyst in the peritoneal cavity following trauma and its successful operative management in a preadolescent previously asymptomatic boy. Importance of detailed physical examination and early diagnosis by using appropriate radiological investigations is highlighted.

INTRODUCTION

Hepatic hydatid cysts can present in a myriad fashion. Acute presentation with rupture into the peritoneal cavity is a rare form of presentation with an incidence ranging from 1% to 8%. Intra-biliary rupture is another form of acute presentation and is more common than intra-peritoneal rupture. Following intra-peritoneal rupture, presentation is usually acute with abdominal signs, such as guarding, and rebound tenderness with anaphylactic reactions occurring in 1% to 12.5% of cases, which at times could be life threatening. Herein, we report a preadolescent boy who presented with peritonitis following traumatic rupture of hydatid cyst of liver. The role of clinical examination and ultrasonography is highlighted for prompt diagnosis and successful management of this form of acute abdomen.

CASE REPORT

An apparently healthy 11-year-old boy presented with acute pain in central abdomen of 5 hours duration. He gave history of a trivial blunt abdominal trauma while at play. Patient also complained of a bothersome itching all over his body especially over limbs and the trunk starting soon after the injury. At presentation, the patient was lying still in bed with pulse rate of 110/min and BP 110/60 mm Hg. There was no pallor. Lesions resembling urticaria were seen over thigh and trunk. Abdominal examination revealed generalized rebound tenderness. Baseline investigations were normal except for leukocytosis (13200/mm³). Roentgenograms of the chest and the abdomen were essentially normal. Ultrasonography revealed that liver was enlarged and there were 2 cystic lesions [6.4x4.6 cm and 8.1x 6.9 cm] in right lobe of liver with hypoechoic contents and floating echogenic membranes and peripheral calcifications. Lot of free fluid was also present.

Intravenous fluids were started with a bolus of Ringer lactate (20ml/Kg) followed by Dextrose 5% in normal saline (0.9%). Intravenous Hydrocortisone and Pheniramine maleate were administered along with antibiotic prophylaxis. The clinical picture correlate with ruptured hepatic cyst.

Sudden generalized pain in abdomen with rashes, frank peritonitis and sonographic findings were suggestive of ruptured hepatic hydatid cyst. Patient was taken for exploratory laparotomy. The peritoneal cavity was filled with approximately 500 ml of bilious fluid which was drained out. Inspecting the liver surface showed extruded bile stained flaccid hydatid cyst.

Figure 1: Extruded flaccid bile stained endocyst.

Another intact hydatid cyst was palpable in segment VI which was removed by partial pericystectomy. The entire peritoneal cavity was lavaged with hypertonic (3%) and normal saline. The
bed of the first cyst was inspected for any bile leak. As there was no evidence of large cystobiliary communication, the cavity was packed with omentum. A tube drain was placed in right subhepatic space. Postoperative course was uneventful. The drain was removed on the 7th postoperative day. Albendazole (15 mg/kg/day) was started and plan was to continue it for 6 months (3 weekly courses and drug free period of one week with a watch on the liver enzymes and counts. four weeks later, the patient presented with upper abdominal fullness not associated with any other complaint. He was afebrile and hemodynamically stable. There was no icterus. On examination, there was distension of abdomen limited to the upper half of abdomen. There was no demonstrable free fluid and bowel sounds were normal. Laboratory values were: Hb-9.2 gms/dl, TLC-6900/mm3, serum bilirubin-0.8 mg%, ALT-17 U/ L, ALP 365 U/ L, AST-28 U/ L. Sonography revealed a large multiloculated cystic mass (15cmx13 cmx18 cm) antero-superior to the liver. The intra-hepatic biliary radicals and the common bile duct were not dilated. There was no free fluid. CT scan was done to know further details. It showed 13cmx13cmx16 cm cystic lesion in the right lobe of liver with well defined septa of liver parenchyma within it. Another cystic lesion was found in the left sub-hepatic space and lesser sac. Based on the findings it was diagnosed to be a “walled off” bile collection. A pig tail catheter was inserted percutaneously into the bilioma under sonographic guidance which was both diagnostic and therapeutic. It drained about 500 ml of greenish brown fluid overnight and culminated with disappearance of abdominal distension. The catheter was removed after 4 days when the effluent was negligible. Patient was discharged and on follow up 3 weeks later, found to be doing well. Currently patient is on albendazole therapy.

DISCUSSION
Echinococcosis (E. granulosus) is a zoonotic disease caused by the larval stage of the tapeworm, Echinococcus granulosus, which is distributed worldwide, with a higher prevalence in South and Central America, Western Europe, the Middle East and some sub-Saharan countries. It is endemic in sheep-rearing areas and it is frequently seen in cattle and pigs. Echinococcosis is transmitted to humans through the ingestion of intermediate hosts contaminated with gravid proglottids containing Echinococcus eggs. After ingestion, the eggs hatch in the small intestine, releasing miracidia, which penetrate the intestinal mucosa and enter the lymphatics and blood vessels to reach the liver and other organs. The subsequent development of tertiary cysts may occur in almost any organ, including the lungs, heart, and brain. The liver is the most common site of infection, with up to 90% of cases involving hepatic hydatid disease. The disease is usually asymptomatic, but symptoms may develop as the cysts grow and press on surrounding structures. The most common symptoms include abdominal pain, fever, and weight loss. Other symptoms may include jaundice, biliary colic, and obstructive jaundice. The diagnosis of Echinococcosis is usually made through imaging studies such as ultrasound, computed tomography (CT), or magnetic resonance imaging (MRI). Treatment options include surgical removal, chemical peritoneal lavage, and albendazole therapy. Surgical resection is the gold standard for treatment, but it is not always feasible due to the size and location of the cyst. In such cases, other treatments such as percutaneous aspiration, chemical peritoneal lavage, and albendazole therapy may be used. Albendazole is a benzimidazole derivative that inhibits the enzyme tubulin, which is essential for the development of hydatid cysts. It is effective in the treatment of Echinococcosis and is often used in combination with surgical resection. The effectiveness of albendazole therapy depends on the size of the cyst, the patient's medical history, and the presence of complications. In conclusion, Echinococcosis is a zoonotic disease caused by Echinococcus granulosus that affects humans worldwide. The disease is usually asymptomatic but can cause significant morbidity and mortality if left untreated. The diagnosis and treatment of Echinococcosis require a multidisciplinary approach that includes imaging, laboratory testing, and surgical resection when possible.

Figure 2: A-Axial section of CT scan showing cystic lesion in the right lobe of the liver with well defined septa of liver parenchyma within it. The lesion in lesser sac is also appreciated B-Same in coronal section.

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vent recurrences, albendazole therapy is mandatory. It should be started immediately and given for a prolonged period of time. Follow up with 6 monthly imaging is prudent to detect recurrences. If these basic principles are followed the recurrences in these cases are not as high as once thought. The purpose of this report is to sensitize the surgeons dealing with emergency and trauma patients to consider rupture of Hydatid cyst in the differential diagnosis of acute post traumatic peritonitis and to reemphasize that a carefully obtained history and physical examination aided by radiological investigation can help diagnose them without undue delay.

CONCLUSION

We have reported a case Hepatic hydatid cyst which had been ruptured after blunt abdominal trauma. Conservative treatment can be tried in asymptomatic cases of hepatic hydatid cyst but exploratory laparotomy remains main stay of treatment when Hepatic hydatid cyst ruptures.

REFERENCE