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PRIMARY PERITONEAL HYDATIDOSIS : A RARE PRESENTATION OF A COMMON DISEASE

General Surgery

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ABSTRACT

Hydatid disease is caused by the larval stage of dog tapeworm, Echinococcus granulosus. It is endemic in many regions of the world. Liver and lung are the common organs affected by hydatid disease. The peritoneal hydatid disease is rare. In most of these cases the peritoneal involvement is related to previous surgery for hepatic hydatid disease. In some cases it may be related to traumatic rupture of a hepatic or a splenic hydatid disease. However primary peritoneal involvement without involvement of any other organ in the body is very rare. A case of primary peritoneal hydatid cysts filling the cavity of the abdomen and pelvis without any other organ involvement is presented and discussed.

KEYWORDS

Hydatid disease, Echinococcus granulosus, primary peritoneal

INTRODUCTION :

Hydatid disease is caused by *Echinococcus granulosus*, a dog tapeworm. The disease is endemic in Asia, South America, and certain parts of Africa and in some Mediterranean countries.[1] The major primary site for the occurrence of the disease in adults is the liver (75%), followed by the lungs (5–15%), and all other organs add up to 20% of cases.[2] Peritoneal hydatidosis is a rare presentation reported in only 2–12% of all abdominal hydatid disease.

CASE REPORT :

A 35 year old male presented with complains of pain in lower abdomen since 3 months, which was insidious in onset, constant, dull aching, relieved on taking analgesics. He gave no history of fever, chills, rash or itchy skin, no joint pain or stiffness or joint swelling. The patient had not undergone any previous surgeries and had no allergies or major medical complaints. He did not smoke or drink alcohol, and lived in a rural area with no direct contact with animals.

On examination his vital signs were normal. Inspection of the abdomen showed slight distension. On palpation a vague lump was present in lower abdomen which was non tender and not mobile, and presence of ascites. The radiograph of chest was normal. Ultrasonography of abdomen revealed ascites with multiple variable size cystic floating lesions suggestive of hydatidosis. The patient was taken up for exploratory laparotomy with the aim of total extirpation of all the visible hydatid cysts. As soon as the peritoneal cavity was opened, multiple hydatid cysts of various sizes were found in the peritoneal cavity. Dense adhesion of the parietal wall with underlying gut was present infraumbilically, harbouring multiple cysts. After taking the necessary precautions one by one all the visible hydatid cysts were excised carefully, and adhesiolysis was done, followed by intraperitoneal wash with scolicidal agent for 10 minutes. Liver and spleen were examined and there were no tell-tale signs of hydatid cysts. Postoperative period was uneventful. Histopathological examination confirmed the cysts being hydatid cysts. The patient was advised to take further medical treatment, consisting of combination therapy of albendazole and praziquantel. When reviewed last, two months after the surgery the patient remained asymptomatic and ultrasonography was also unremarkable.

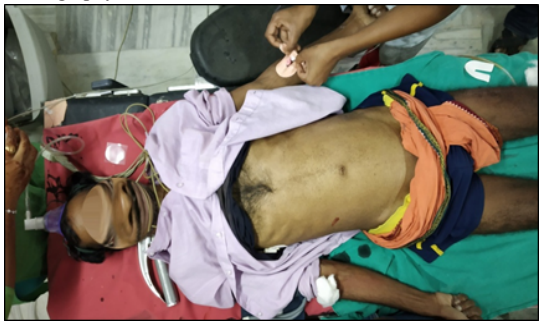

Fig 1. Pre operative picture of patient, showing slight abdominal distension

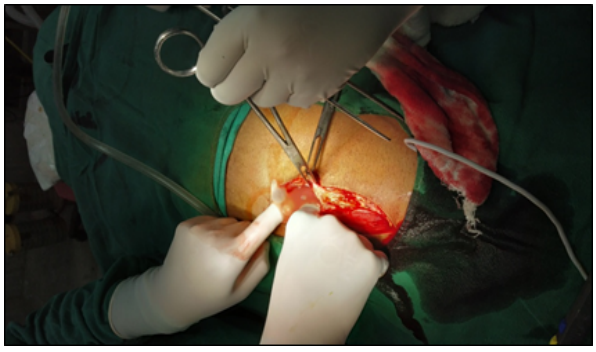

Fig. 2. Intra operative picture showing hydatid cysts as the peritoneum was opened

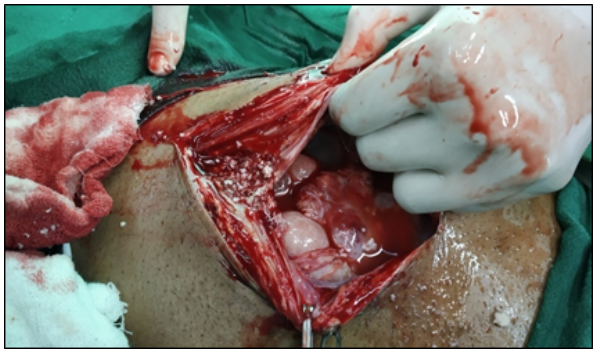

Fig. 3. Intra operative picture Showing multiple hydatid cysts and peritoneal adhesion to underlying gut (arrow)

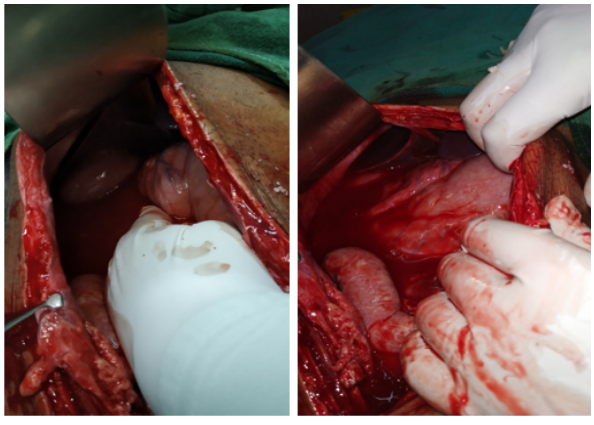

Fig 4. Intra operative pictures showing normal liver in peritoneal hydatidosis

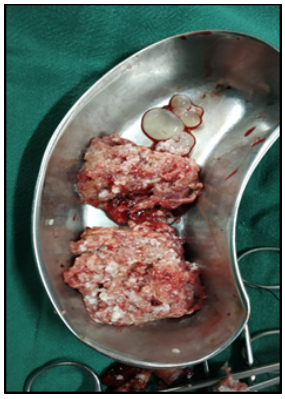

Fig 5. Excised peritoneum harbouring hydatid cysts

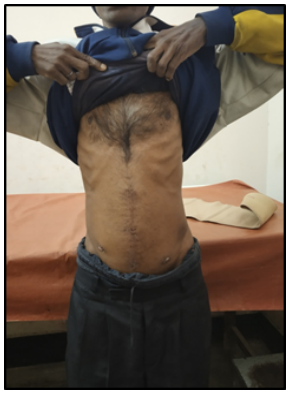

Fig 6. Patient for follow up at 1 month after surgery

DISCUSSION :

Hydatid disease also known as cystic echinococcosis is a zoonotic infection caused by the larval stage of cestode tapeworm *Echinococcus granulosus* and rarely by *Echinococcus multilocularis*. It is endemic in the cattle grazing areas particularly Australia, New-Zealand, Middle East, India, Africa, South America, and Turkey.The life cycle is maintained in nature by dog-sheep-dog cycle. Man is an incidental intermediate host. However in man the life cycle of the parasite comes to an end. Man gets infected when the tapeworm ova are ingested either by consuming unwashed and uncooked vegetables or as a result of close contact with an infected dog.

The major primary site for the occurrence of the disease in adults is the liver (75%), followed by the lungs (5–15%), and all other organs add up to 20% of cases.[2] These percentages are different for children as the lungs form the primary site (64%) followed by the liver (28%).

Peritoneal hydatidosis is frequently secondary to operative intervention for hepatic hydatid cyst or splenic hydatid cyst. The frequency of peritoneal involvement is approximately 13%.[1] Primary peritoneal hydatidosis is rare and has been reported to occur in only 2% of all abdominal hydatid disease cases.[3-5]

The mechanism of primary peritoneal involvement is not clear. Various pathways have been suggested in the pathogenesis of peritoneal localization of the cysts. The dissemination into peritoneal cavity may take place via lymphatic or systemic circulation. Up to 15% of parasites escape from being filtered in the liver and lungs and enter the systemic circulation to implant in various sites.[6,7]

The clinical course of peritoneal localization usually can be non-specific and depends on the site of involvement, cyst size and the effect of the enlarged cysts on adjacent organs. Therefore, it is not unusual to come across the presence of an inert mass without any symptoms or deterioration in the patient's condition.

In most of the cases, the peritoneal hydatid cyst does not produce any symptoms and the diagnosis is made when the patient undergoes ultrasonography for an unrelated cause as in this patient. Ultrasonography is the first line of screening and leads to diagnosis in more than 95% of cases.[8] CT scan gives better evaluation of hydatid cysts. Serological tests have approximately 85% sensitivity.[9] Surgery in the form of complete excision of the cyst is the best curative treatment for peritoneal echinococcosis which was done in this case. Therapy for disseminated peritoneal hydatidosis remains medical.[10] The combination of albendazole and praziquantel has been investigated in vivo in a rat model of hydatid infection. In contrast to monotherapy with either agent, combination treatment produced a significant reduction in both the number and viability of cysts.[11,12]

Albendazole is active against both protoscolices and the germinal membranes. Praziquantel is a highly effective protoscolicidal agent both in vitro and in vivo. The likely role for praziquantel in human hydatidosis may be in preventing encystment of protoscolices following perioperative spillage.

CONCLUSION :

The number of reports of primary peritoneal hydatid cyst disease without any other organ involvement are still very few. The presented case emphasizes that hydatid disease should be considered and included in the differential diagnosis of any cystic mass for patients living or originating from an area of endemic hydatid disease, regardless of the presence of primary cystic lesions in the common sites. Peritoneal hydatid cyst is usually asymptomatic and remains undiagnosed until ultrasonography examination is done for unrelated symptoms. Careful and complete surgical excision of the cyst is the curative treatment. In extensive involvement, scolicidal agents are helpful to treat small cysts which are invisible to the naked eye.

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