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Case Report

Primary hydatid cyst of the mesentery presenting as a small bowel volvulus

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ABSTRACT

Hydatid disease mostly caused by *Echinococcus granulosus* (dog tape worm) is a common parasitic disease in pastoral areas. It produces cysts in the human body. Human is an accidental intermediate host. Most common sites are liver and lungs. Intraperitoneal hydatid cyst occurs sometimes and it is usually secondary to rupture of primary hepatic hydatid cyst. Primary intraperitoneal hydatid cyst is rare (2%). Primary hydatid cyst in mesentery is very rare. Small bowel volvulus is rare but documented complication of tumours of the mesentery, including cysts. In this article, the authors present a case of primary mesenteric hydatid cyst with acute intestinal obstruction secondary to volvulus.

Keywords: Hydatid cyst, Mesenteric cyst, Small bowel volvulus, Whirl sign

INTRODUCTION

Hydatid cyst is caused by *Echinococcus granulosus*. Humans are accidental intermediate hosts. Primary mesenteric hydatid cyst is rare.[1] We present a case of primary mesenteric hydatid cyst in a 17 year old male causing acute intestinal obstruction secondary to volvulus.

CASE REPORT

A 17 year old male patient presented with acute intestinal obstruction. The abdomen was distended but there was no mass abdomen palpable. Abdominal x-rays showed multiple air fluid levels. Haemoglobin, electrolytes, renal function test was normal. Contrast enhanced computed tomography (CECT) scan of the abdomen and showed volvulus of small bowel with classic whirl sign and uniloculated cystic lesion in the pelvis (Figure 1). Liver and spleen were normal. We made a diagnosis of mesenteric cyst causing volvulus and performed a laparotomy. On exploration a cyst measuring 10×9×8 cm in mesentery of jejunum with volvulus was seen (Figure 2). Liver, pancreas, spleen and other organs were normal. The jejunum along with the cyst was resected. Histopathology was reported as hydatid cyst. The patient was prescribed a course of albendazole on follow up.

Figure 1: CT showing small bowel volvulus whirl sign.

Figure 2: Hydatid cyst in mesentery of jejunum.

DISCUSSION

The larva of the cestode Echinococcus causes Echinococcosis (hydatid disease). Four species can cause infection in humans: *Echinococcus granulosus* (cystic hydatid disease), *Echinococcus multilocularis* (alveolar hydatid disease), *Echinococcus vogeli* and *Echinococcus oligarthus* (polycystic hydatid disease).[1] The life cycle of *Echinococcus granulosus* has definitive host - a dog and an intermediate host - sheep. The cestode resides in the proximal small bowel of the dog and lays eggs which are passed in the faeces. Sheep ingest the eggs (ovum) whilst grazing. Humans become accidental intermediate hosts through contact with a definitive host (usually a domesticated dog) or ingestion of contaminated water or vegetables.[1] In the duodenum the embryo is released which through portal circulation reaches the liver where it develops into a cyst. If the host is a sheep and when it is culled the dog eats the liver of the sheep and the cycle is completed. In humans the cyst is the end stage.

The most common sites of hydatid cyst are - liver (59-75%), lung (27%), kidney (3%), bone (1-4%) and brain (1-2%). Peritoneal hydatid cyst is uncommon and is of two types primary and secondary. Secondary intraperitoneal hydatid cysts are more common (13%) and occur due to the rupture of a primary liver cyst (spontaneous, traumatic and iatrogenic).[2] Primary peritoneal Echinococcosis accounts for 2% of all abdominal hydatidosis.[3] In 27 cases of abdominal extrahepatic hydatid disease, operated and reviewed by Balik et al, 19 patients had coexistent hepatic cyst (70.4%) while eight patients (20.6%) had only extrahepatic cysts located in spleen (three patients), pancreas (two patients), adrenal glands (four patients), mesocolon (five patients), mesentery of small intestine (one patient), ovaries (one patient), retroperitoneum (four patients) and omentum (two patients).[4] A larger retrospective study of 183 abdominal hydatid cysts by Wani et al reviewed 12% patients had extrahepatic abdominal cyst.[5]

A single cyst in the mesentery can be considered primary only when no other cysts are present. In these cases, the embryo reaches the mesentery through a haematogenous or lymphatic route. Clinical manifestation is due to mass effect of enlarging abdominal cyst, chronic pain abdomen due to traction on mesentery or spontaneous rupture.[4] All abdominal cystic lesions including mesenteric, pancreatic, gastrointestinal duplication, ovarian cysts and lymphangioma, must be considered in the differential diagnosis. Any cyst or tumour in the mesentery can rotate and produce volvulus of the connected mesentery and small bowel.[6] Serology and imaging are the main tools for establishing diagnosis of hydatid disease. CECT gives more precise information regarding the morphology (size, location, neighbourhood and number) of the cyst. Patients with small bowel volvulus can be identified on computed tomography (CT) through detection of a whirl sign.[7] Surgery is the most effective treatment. In our case the bowel wall was close to the cyst and hence was resected along with the cyst. Albendazole is used as adjuvant therapy to surgery to prevent recurrence as it suppresses the development of hydatid cysts following intraperitoneal inoculation of protoscolices.[8]

CONCLUSION

Primary mesenteric hydatid cyst is rare as other organs are affected more often. It can present as an acute intestinal obstruction due to volvulus owing to the twisting of the cyst. CECT scans is the best investigations to diagnose hydatid cyst as well as volvulus. Post-operative adjuvant albendazole can be given in patients in whom preoperative diagnosis was missed.

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