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THE ENIGMATIC ABDOMINAL MASS: UNVEILING A GIANT CYSTIC ECHINOCOCCOSIS

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ABSTRACT
Echinococcosis commonly affects the liver and lungs. Atypical presentations are rarer but pose significant diagnostic and management challenges. We present the case of a 23-year-old female patient, an occupational food runner, who presented with complaints of abdominal distension over a 4-month period. Sonography, CT and MRI pointed to the presence of a large cystic mass in the abdomen, and the differential diagnoses offered were mesenteric cysts or ovarian cysts. Intraoperatively, a 35 × 30 cm cyst with 5 litres of clear fluid was found, and huge sheets of loosely floating brown-coloured membranes noted at the base of the cyst prompted the diagnosis of a hydatid cyst, which was later confirmed by histopathological examination. A high index of suspicion is warranted in endemic areas and one must be aware of the potential challenges associated with atypical presentations.

Keywords: Echinococcosis, large cystic mass, histopathological examination

INTRODUCTION

Hydatid disease is a global public health problem caused by the parasites Echinococcus granularis and Echinococcus multilocularis. The definitive host for this parasite is the intestine of a carnivore (for example, canine), and faecal-oral contamination leads to transmission to an intermediate host, which is an herbivore such as sheep. Here, the eggs hatch in the sheep intestine, penetrate the intestinal wall, and reach the liver, from where they are transmitted via circulation [1]. Humans are accidental hosts in this lifecycle and are infected either by ingesting dog faeces accidentally or by consuming foods such as sheep offal. It is termed anthropozoonosis and is endemic to many areas, including Mediterranean countries, parts of Africa, Asia, and Central America [2]. In India, it is endemic to Kashmir and surrounding regions. The ingested eggs penetrate the intestinal wall and reach the hepatic circulation, where they act as the first filter. The lungs are the second filter, and the few ova that escape these filters then get distributed via systemic circulation to virtually anywhere in the body.[3] Hence, while hepatic and pulmonary diseases are the most common, hydatid cysts have been noted at various atypical sites, including the spleen (0.9%), pancreas (0.5%), kidneys (2%), bones(0.5-4%), muscle (3%), heart and vessels(<2%), brain (1-3%), adrenals (0.018% on autopsy studies), omentum, testes, and ovary, apart from reports in subcutaneous sites[4].

Although hydatid cysts occur in less than 10% of cases, the uncommon sites of hydatid cysts must always be considered among the differential diagnoses, especially in endemic areas such as our country. In addition, the rarity of such occurrences means that there are no set protocols for management, and the anatomical and diagnostic challenges that are implicit mean that they vary largely on a case-to-case basis [5]. We present a case of an abdominal mass that was thought to be a mesenteric or ovarian cyst but was discovered to be a hydatid cyst attached to the transverse mesocolon intraoperatively.

CASE REPORT

A 23-year-old female patient, an occupational food runner, presented with complaints of abdominal distension over a 4-month period, which was insidious in onset and not associated with any other

perceived issues. On clinical examination, the abdomen was distended and a diffuse intra-abdominal mass was felt, extending from the pelvis up to 5 cm below the umbilicus. The lower extent of the mass was not appreciable, and it did not move during respiration. Fluid thrill was also noted. A clinical diagnosis of a probable ovarian cyst was made. Sonography revealed a large abdominopelvic cystic lesion (20 × 27 cm) occupying the subhepatic and sub-splenic spaces and extending to the pelvis. Computed tomography showed a large, well-defined, encapsulated, midline pelvoabdominal unilocular cystic lesion measuring 26 × 11 × 18 cm extending inferiorly from the pelvis to the level of the epigastric region superiorly, giving the impression of a right ovarian or mesenteric simple unilocular cyst. MRI resonance imaging showed a large abdominopelvic cystic mass lesion measuring 25 × 12 × 28 cm, extending from the pelvis inferiorly and superiorly to the epigastrium, suggestive of a large abdominopelvic cystic mass. However, the tumour markers were negative for ovarian and other specific origins. (AFP- 1.07, CEA-2.50, CA 125 – 13.4, CA 19-9 - < 1.4, Beta HCG <2.39)

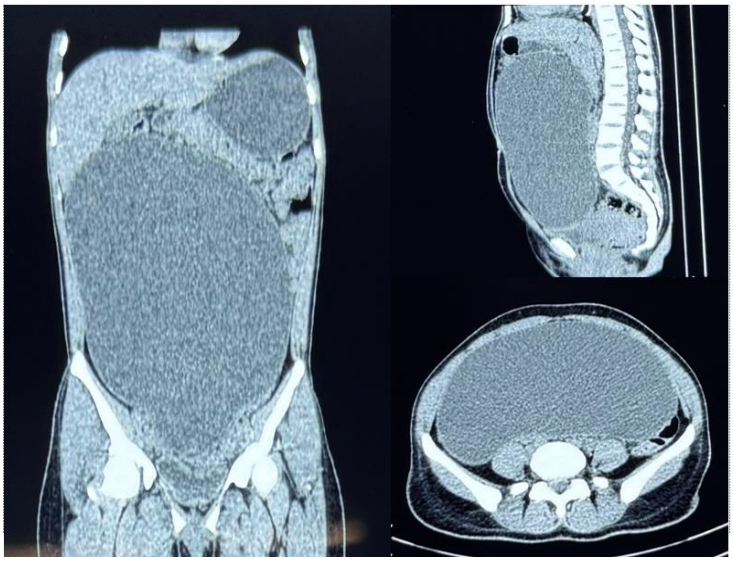

Figure 1: CT Image of Large, Simple, Unilocular Cyst

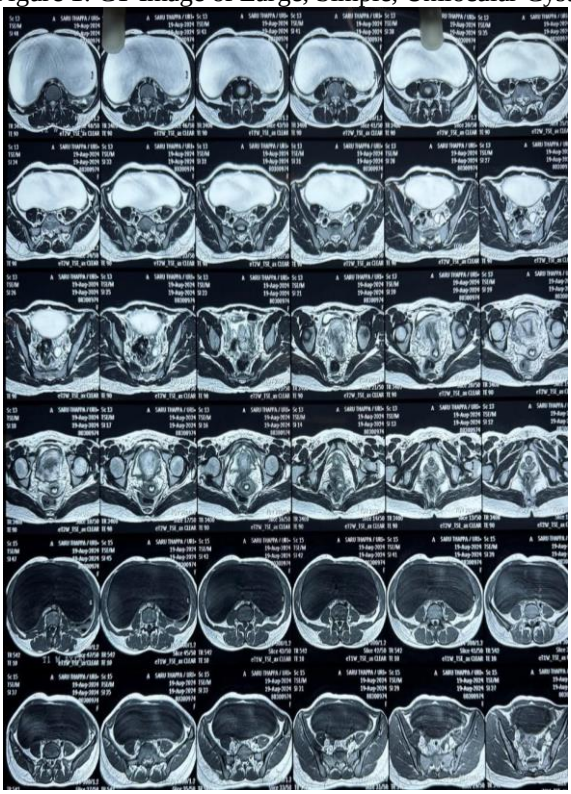

Figure 2: MRI showing large abdominopelvic cystic mass

The patient had initially been seen in a gynaecology OPD, but given the mixed picture, a general surgery consult was taken. She was taken up for exploratory laparotomy. A large 35 x 30 cm cyst was noted occupying the entire abdominal cavity up to the xiphisternum, with the pelvic organs being free from the cyst. The cyst was attached only posteriorly and free of other aspects. On aspiration, clear fluid was noted, a small nick was made, and almost 5 litres of clear fluid was suctioned out. The cyst opening was extended, and large sheets of loosely floating brown-coloured membranes were noted at the base of the cyst, suggesting a diagnosis of hydatid cyst.
The opening was held with artery clamps and meticulous dissection of the cyst around the relieving adhesions was performed. A narrow pedicle was found in the transverse mesocolon away from the root of the mesocolon. The cyst was excised in toto, and an otherwise normal anatomy was noted during laparotomy. Thorough washing was performed with normal saline and the abdomen was closed in layers.

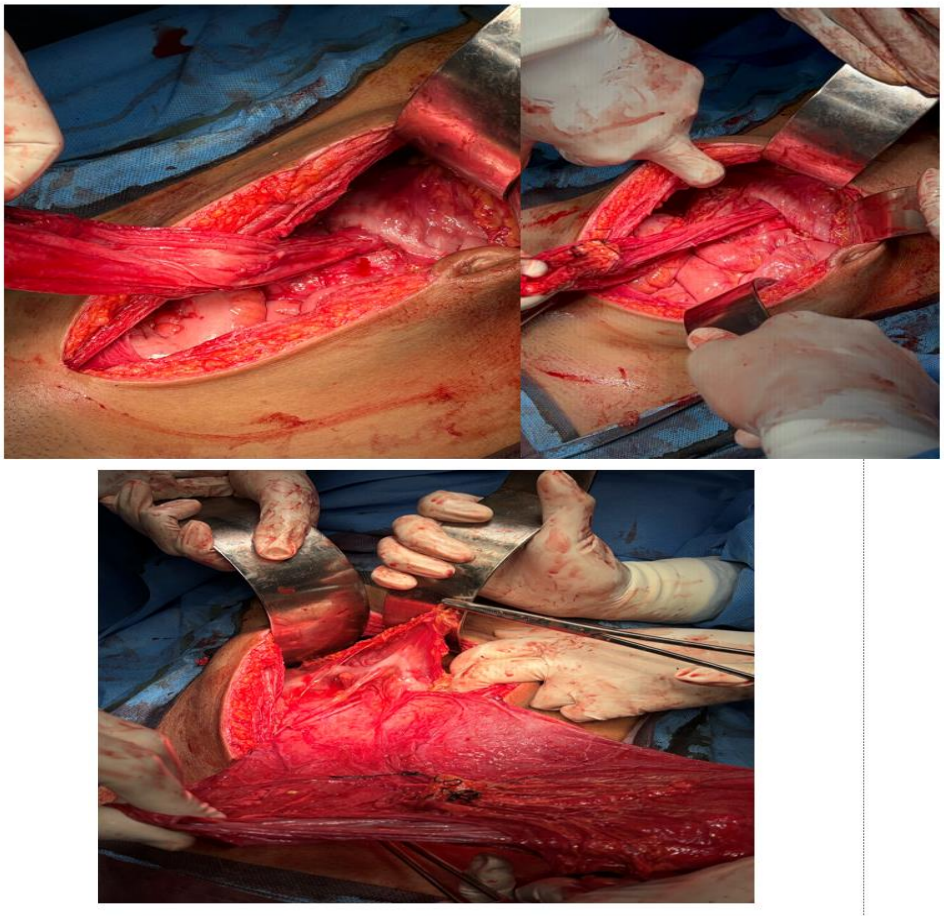

Figure 3: Intra-operative findings showing attachment to transverse mesocolon

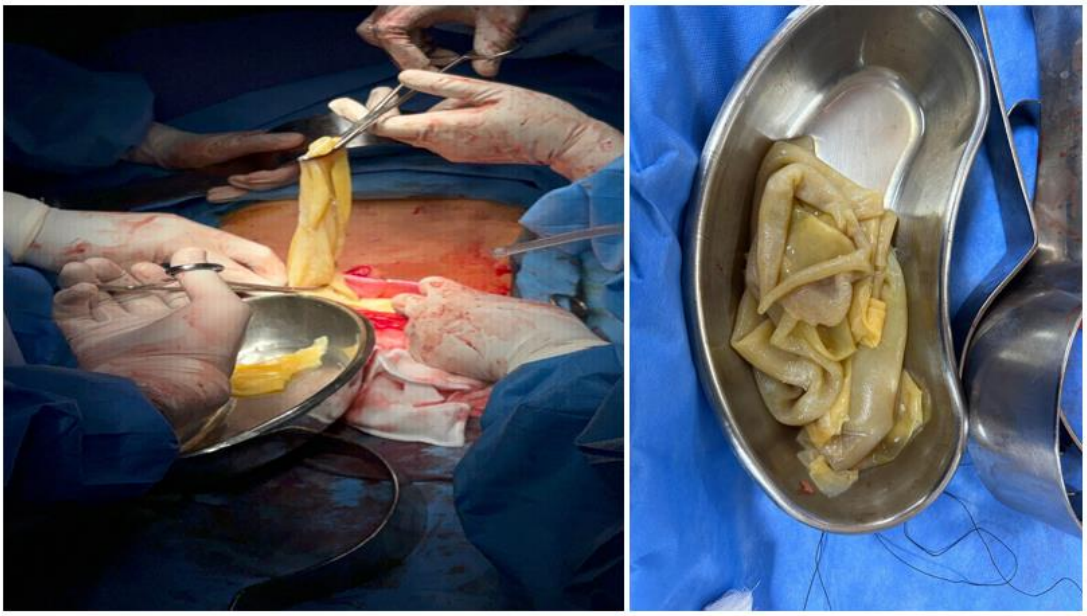

Figure 4: Intra-operative finding of brown-coloured decompressed cyst wall

The postoperative period was uneventful and the patient recovered well. There was a weight difference of 6 kg on POD 1 (50 kg vs. 44 kg) compared to the preoperative measurement. She was discharged on POD 7 after a long-duration course of albendazole was prescribed. The postoperative sonographic findings were normal. Histopathological examination revealed a fibrous cyst wall with a mixed inflammatory infiltrate composed predominantly of eosinophils, foamy histiocytes with giant foreign body cells, and an attached laminated membrane, confirming the intraoperative diagnosis of hydatid cyst.

DISCUSSION

The occurrence of hydatid cysts at uncommon sites has been reported in medical literature.

Papageorgiou et al. presented a case of a cystic lesion of the back, which was assumed to be a sebaceous cyst or lipoma but turned out to be a hydatid cyst on histopathological examination [6]. Bouraoui et al. reported a case of hydatid disease presenting as a forearm swelling, that was diagnosed by classic ultrasound features: snowflake sign for the hydatid sand, honeycomb sign for the presence of daughter cysts and waterlily sign denoting detached laminated membrane that appears to be floating.[7] Id el haj et al. presented a rare case of a mediastinal hydatid cyst in the anterior mediastinum that was surgically removed. They noted that echinococcosis should always be a differential diagnosis for mediastinal swelling in endemic areas. In literature, most hydatid cysts are known to occupy the posterior mediastinum, have no link with respiration, and carry a risk of compression and/or rupture.[8]

Musculoskeletal hydatid cysts are even rarer, with a total prevalence not exceeding 5%, even in endemic areas. Lakhim et al. reported a case of a large multilocular cyst in the left thigh swelling that was treated with peri cystectomy [9]. Imran et al. presented a case of a simple unilocular cyst with a mural nodule in the right lobe of the liver in a young 20-year-old female with no features of jaundice. In this case, positive IgA ELISA aided clinch diagnosis preoperatively, along with the presence of eosinophilia. The patient was treated surgically with a course of metronidazole [10]. The limited economic resources of the patient make such testing unplausible for all cases in our setting unless a very high cause for suspicion is present.

Mona et al. reviewed a retrospective case series of 11 patients and noted the occurrence of atypical hydatid cysts commonly in the spleen (n=6), and pelvis (n=3) followed by gluteal and spermatic cord cysts [11].

The first known report of a hydatid in the transverse mesocolon was reported by Khanna MN in 1941, who reported the case of a 10-year-old boy presenting with abdominal distension and features of obstructive jaundice, subsequently treated with exploratory laparotomy and an intra-operative diagnosis of hydatid disease was made on noticing sand-like granules.[12] Recently, Berton et al. reported two

cases of mesenteric hydatid cysts that mimicked pseudomyxoma peritonei and necessitated multidisciplinary involvement, as in our case. These patients also presented with concomitant appendicitis as well [13].

Although rare, multiple reports have suggested the occurrence of mesenteric and peritoneal hydatid cysts [14]. Recently, Adelyar et al. reported a case of a left upper quadrant mass impinging on the kidney that caused a mass effect, which was also treated surgically [15]. These reports make it essential for us to be aware of the various possibilities and challenges associated with atypical hydatid cysts. Current treatment options for hydatid disease of the liver are well-defined and include medical management, peri cystectomy, and percutaneous drainage of the cysts [16]. The treatment of atypical presentations is still managed on a case-to-case basis, but most reports indicate that surgery and debulking, and if possible, complete removal of the cyst, is the best option today. Further research is required to accurately assess the postoperative follow-up. Improvement of hygiene and sanitation standards especially for those in the livestock and food industries is the main focus of prevention

CONCLUSION

The atypical presentation of hydatid cysts poses a challenge for diagnosis and management. A high index of suspicion is warranted in endemic areas. Transverse mesocolon hydatid cysts are extremely rare, and surgical management remains the best option, as per our experience. Further research is required to establish appropriate guidelines for the management of atypical hydatid cysts.

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