Hydatidosis: Case report and literature review

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ABSTRACT

Hydatid cyst (HC) or hydatidosis is a global parasitic zoonosis infection caused by the larval stage of cestode *Echinococcus granulosus*. It continues to be a substantial cause of morbidity and mortality in many parts of the world, endemic to countries in the Mediterranean, Australia, North Africa, Australia, New Zealand, South America, the Philippines, Northern China, and the Indian subcontinent. Hydatid disease is endemic in India. We report the case of a HC of the liver with multiple abdominal HCs in a 61-year-old female with complaints of multiple painless lumps in the abdomen which was gradually increasing in size. A contrast-enhanced CT scan of the abdomen and pelvis was done with findings suggestive of HC of the liver with multiple peritoneal hydatidoses. Treatment strategies of HC of the liver can include medical therapy, percutaneous drainage, or surgical intervention (through a conventional or laparoscopic approach).

Key words: *Echinococcus, Hydatid disease, Peritoneum*

Hydatid cyst (HC) or hydatidosis is a global parasitic zoonosis infection caused by the larval stage of cestode *Echinococcus granulosus*. It continues to be a substantial cause of morbidity and mortality in many parts of the world, endemic to countries in the Mediterranean, Australia, North Africa, Australia, New Zealand, South America, the Philippines, Northern China, and the Indian subcontinent. It is estimated that the worldwide incidence of cystic echinococcosis is about 100,000–300,000 cases annually and is known to occur in at least 100 countries [1]. Hydatid disease is endemic in India. The annual incidence is varying, 1–200/100,000 population [2]. Presentation in the form of disseminated intraperitoneal hydatid disease is an extremely rare finding. Hence, we report such a presentation where the abdominal cavity is seen to contain multiple HCs.

CASE REPORT

A 61-year old female patient presented with complaints of multiple painless lumps in the abdomen which are growing slowly in size over 30 years. It was associated with nausea and loss of appetite for 6 months. On general examination, the vitals were stable. On per abdomen examination, the abdomen was distended and multiple lumps of sizes – 7×4 cm in umbilical region, 3×2 cm in the right hypochondriac region, and 3×2 cm in the left lumbar region were palpable (Fig. 1).

Laboratory investigations comprising complete blood count, renal function test, and liver function test were done and found within normal limits. A contrast-enhanced computed tomography (CECT) of the abdomen and pelvis revealed a well-defined cystic lesion of size 15.6×17.7×19.3 cm in the left lobe of the liver. Multiple septae and cystic lesions were noted within this lesion suggestive of daughter cysts, 11 variable-sized lesions noted scattered throughout abdomen and pelvis, the largest measured 12.6×16.7×18.8 cm in the right iliac region extending into the pelvis up to the superior margin of the urinary bladder. CECT abdomen pelvis was suggestive of HC of the liver with multiple peritoneal hydatidoses, few of them calcified.

The patient was started on tablet albendazole (ABZ) 600 Mg 12 hourly for 6 weeks following which the patient underwent exploratory laparotomy with deroofing of the liver HCs and excision of the abdominal HCs (Fig. 2a). The specimen was sent for histopathological examination (Fig. 2b). Gross examination and histopathological examination were suggestive of a cystic lesion with mixed inflammation, rich in eosinophils which were suggestive of HCs (Fig. 3). The patient was continued on tablet ABZ for 3 months. The patient was on regular follow-up for 6 months and did not have any fresh complaints or recurrence of HC.

DISCUSSION

The most common sites of hydatid disease are the liver (approximately 70%) and the lungs (15–47%). Kidney (2–4%), bones, and the brain are less likely to be involved. The incidence of the disease in other sites, such as the heart, spleen, pancreas, and muscles is extremely rare. In all cases, the involvement of

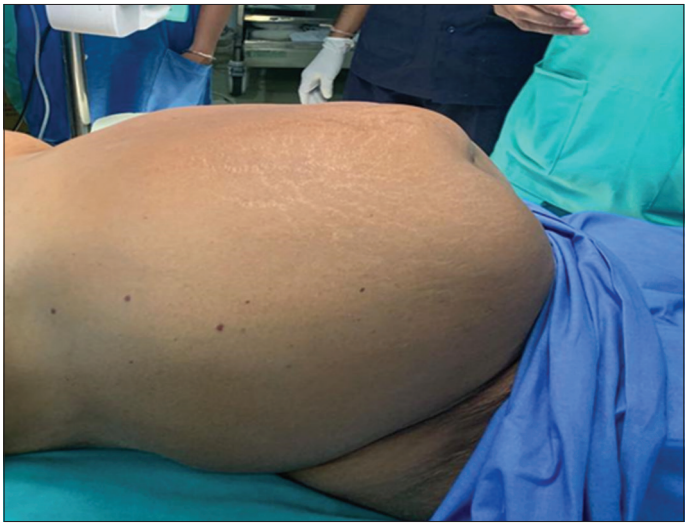

Figure 1: Pre-operative photograph

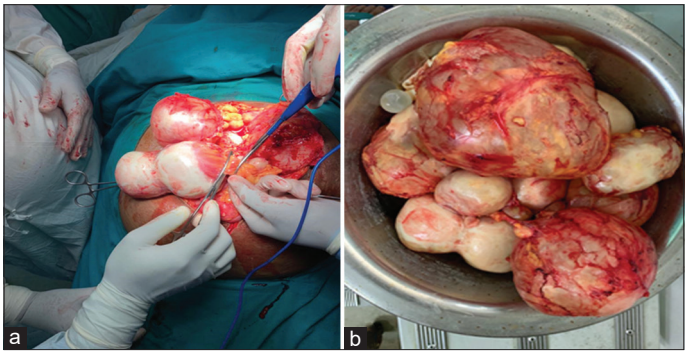

Figure 2: (a) Multiple hydatid cysts seen intraoperatively; (b) post-operative photograph of specimen

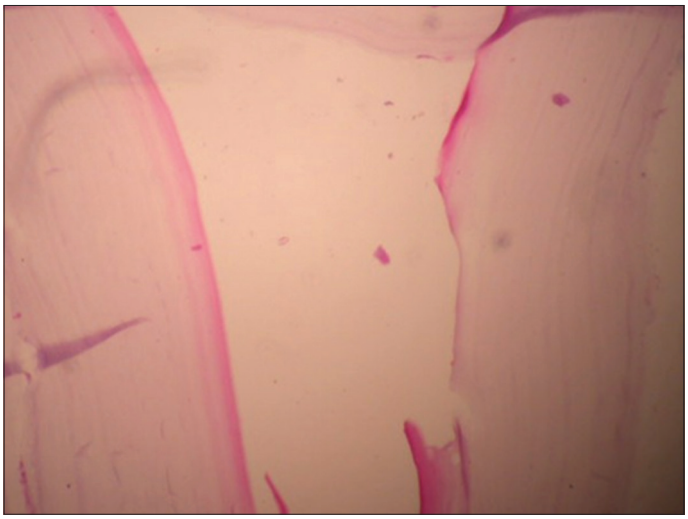

Figure 3: Microscopic examination of specimen

two organs occurs in about 5–13% of the cases [1,2]. It is a slow-growing cyst with patients being asymptomatic for a long period of time. In most cases, there is only one cyst, whereas in some cases, multiple cysts may be present (20–40%).

Symptoms depend on the size and the number of cysts and possible compression of surrounding structures [3]. As in our case, signs of hydatid disease included non-specific abdominal mass, pain due to traction on the mesentery and pressure effects on adjacent organs. Liver hydatidosis may present with signs and symptoms, such as hepatomegaly, right upper abdominal or epigastric pain, nausea, and vomiting. There may also be systemic immunological responses in case of cyst leakage or rupture. Furthermore, the rupture in the peritoneal cavity can be fatal and potentially lead to secondary cyst formation. Cysts may be responsible for segmental or lobar liver atrophy in an instance where portal vein or biliary tracts are involved [3].

The objective of treatment in hydatid disease is the complete elimination of the parasite. It is vital to take steps to prevent recurrence and minimize mortality. Drugs used for the treatment of hydatidosis are the benzimidazole compounds (BMZs), namely, Mebendazole (MBZ) and ABZ [4]. In the case of small cysts (<5 cm) or inoperable patients, BMZs may be used alone for the treatment. ABZ is considered the drug of choice since it is more active in vitro and it has better gastrointestinal absorption and bioavailability. Inactivation of infectious scolices and germinative membranes remains the goal of surgical procedures. Surgical options may be divided into radical (pericystectomy and organ resection) and conservative approaches (unroofing or capitonnage) [5].

In our case, the multiple intra-abdominal cysts found in mesentery, omentum, and peritoneum were removed; the liver cyst was opened, sterilized with hypertonic saline washout, and finally drained with tube placement. The surgical management was followed by medical treatment comprising tablet ABZ 600 mg twice daily for 3 months. In a similar case reported, a 55-year-old male presented with vague abdominal symptoms such as non-specific abdominal pain, dyspepsia, nausea, and anorexia [6]. Surgery was the first line of treatment in combination with pre-operative and post-operative anti-helminthic drug therapy [7].

Another case that was reported in a 65-year-old female presenting as swelling in abdomen for 3 months, the diagnosis was provisionally considered as ovarian tumor although CA-125 was within the normal range. Intraoperatively the cyst fluid showed multiple scolices, hooklets, and suckers and the diagnosis of hydatidosis was confirmed on histopathology, hence concluding that considering the rarity of peritoneal hydatidosis, it can often be confused with the diagnosis of abdominal tumors [8]. Another case of primary peritoneal hydatidosis masquerading as appendicular lump was reported in a 56-year-old female presenting in the emergency department with acute abdominal pain and mass in the right iliac fossa. Although laboratory investigations and imaging studies pointed toward the diagnosis of hydatidosis, the diagnosis was confirmed after histopathological examination of cyst excised from appendicular mesentery [9].

Other treatment modalities, such as minimally invasive surgical approaches, and utilizing laparoscopic techniques, have also been used for patients with hydatidosis. Although promising results with laparoscopic treatment have been seen, further experience is required [6]. In our case, an open procedure was preferred as we had two large hepatic cysts and multiple others in the abdomen and the pelvis.

CONCLUSION

There is a low incidence of patients of hydatidosis with the simultaneous presence of cysts on different locations, whereas their presence in the peritoneal is rarely reported. Hydatid disease should be considered in the differential diagnosis of cysts within the peritoneal cavity in endemic areas. Investigations and treatment should be done meticulously and thorough imaging, examination, and surgical excision play a key role in the patient's overall treatment.

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