

Disseminated Intra Abdominal Hydatid Disease

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ABSTRACT

Introduction: Hydatid disease (HD) is a unique parasitic disease that is endemic to many parts of the world. It is a zoonotic infection which is a significant health problem in many sheep and cattle raising areas. It is manifested by slowly growing cystic masses. The disease can be seen anywhere in the body; however, liver (75%) and Lung (15%) are the organs which are most commonly impacted. It can be rarely manifested as Disseminated intra-abdominal hydatid. In this report we are discussing an unusual case of disseminated intra-abdominal hydatid disease.

Case report: Here we report a case of a 55 year old male who presented with vague chronic pain in upper abdomen since 5 years. On ultrasound evaluation, multiple intra-abdominal (intra peritoneal, mesenteric, hepatic, splenic and subdiaphragmatic) cystic lesions were seen. CECT abdomen was done which confirmed the ultrasound findings and intra-abdominal cysts with calcification were better delineated. Hydatid disease was confirmed on serology.

Conclusion: Disseminated intra-abdominal hydatid disease is a rare presentation. Presence of Hydatid Cyst in an unusual location with atypical imaging findings can mimic other conditions. Therefore, familiarity with imaging findings in patients living in endemic regions is advantageous in this context.

Keywords: Disseminated, Hydatid Disease

INTRODUCTION

Hydatid disease is caused by *Echinococcus granulosus* and rarely by *Echinococcus multilocularis*. It is a chronic and cyst-forming disease. Liver and lung are the most frequently affected organs. Muscles (5%), bones (3%), kidneys (2%), spleen (1%), heart (1%), pancreas (1%) and central nervous system (1%) are other sites which are affected by cysts.⁴ Primary peritoneal hydatidosis is extremely rare. Secondary hydatid disease of the peritoneum is usually the result of traumatic or surgical rupture of a hepatic, splenic or mesenteric cyst with abdominal and pelvic dissemination.^{5,6} However, our case did not have any history of previous surgery or blunt trauma. Here we present a rare case of disseminated intra abdominal hydatid disease involving the liver, spleen, mesentery and peritoneal cavity.

CASE REPORT

55 year old male, presented with vague chronic upper abdominal pain since 5 years. He is a known case of bronchial asthma which is poorly controlled on medications and has frequent bouts of exacerbations. However, no other chronic comorbidities. There is no history of surgery or trauma. Liver function tests were within normal limits. Ultrasonography

(USG) abdomen was done, which showed multiple hepatic, splenic, peri-splenic and intraperitoneal cysts. These cysts showed absence of daughter cysts and most of these had internal mixed hypo and hyperechoic matrix, resembling a ball of wall. Some of these cysts also had punctate echogenic foci in its walls, suggestive of calcifications. These USG findings entailed a possibility of disseminated abdominal hydatid disease (inactive stage of disease – CE 4 & CE 5 as per the WHO classification). Contrast enhanced CT of the abdomen confirmed these findings with better delineation of multiplicity, location and wall calcifications of these cysts. Some of these cysts show thin, enhancing, regular and non-calcified septae within. The radiological possibility of disseminated intra abdominal hydatid disease was confirmed on serological tests. Currently he is on oral albendazole.

DISCUSSION

The adult *Echinococcus granulosus* resides in the small bowel of the definitive hosts, namely the dogs or other canids. Gravid proglottids release eggs in the feces which, are later ingested by intermediate hosts (camel, horses, cattle, goat, sheep and), and are hatched in the small bowel. Humans are incidental hosts. Oncosphere is released by these eggs, which penetrates the intestinal wall and migrates through the circulatory system into various organs, especially the liver and lungs, but also in more uncommon locations.⁷ Peritoneal hydatid disease is more likely to be seen in patients with previous hepatic surgery for echinococcosis, and the dissemination is mostly seen after blunt trauma. However, our case did not have any history of previous surgery or blunt trauma. It has also been reported that spontaneous and asymptomatic micro-rupture of hepatic cysts causes peritoneal cavity to be involved.⁸

The cysts grow slowly, and humans usually remain asymptomatic during this period. Most of the times there can be only one cyst, but around 20-40% of cases involve multiple cysts. The size and the number of cysts and possible compression of surrounding structures impacts the symptoms. Around 30% of cases at the time of diagnosis contain calcified cysts.^{7,9}

As in our case, signs of intraperitoneal and mesenteric hydatid disease may include a non-specific abdominal mass,

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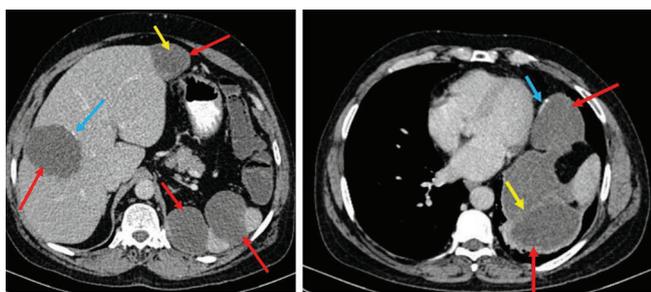


Figure 1a and 1 b: Multiple intra hepatic, splenic and subdiaphragmatic cysts (red arrows), Some of these show septae (Yellow arrow), Some of these show wall calcifications (blue arrow).

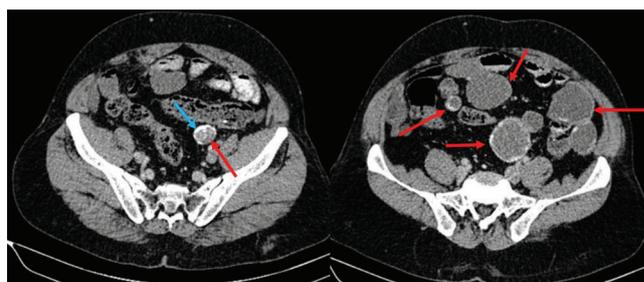


Figure-2: Multiple intra-peritoneal cysts (red arrows). Some of these show cyst wall calcifications (blue arrows). Incidentally detected umbilical hernia (green arrows).

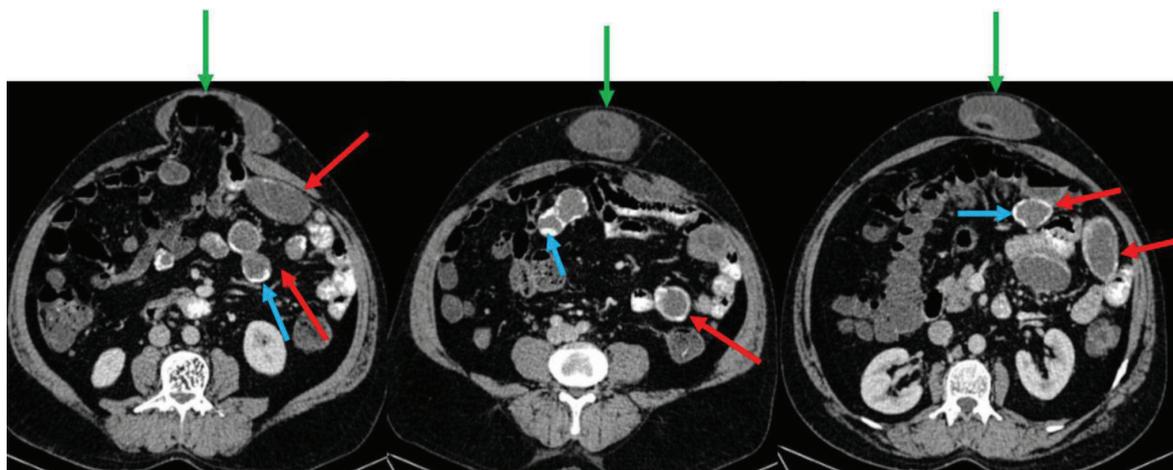


Figure-3: Multiple intra-peritoneal cysts (red arrows). Some of these show cyst wall calcifications (blue arrows). Incidentally detected umbilical hernia (green arrows).

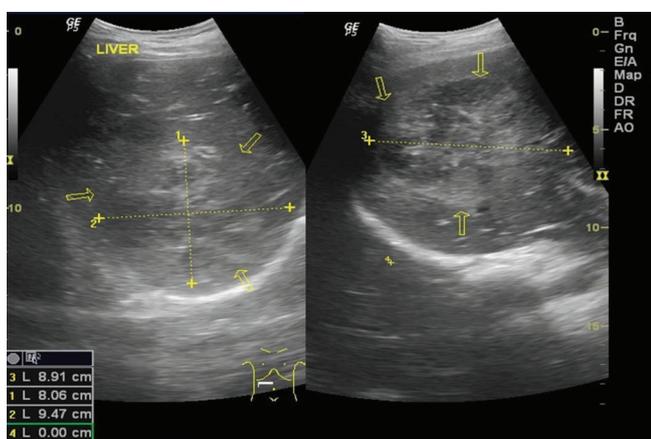


Figure-4: Cyst in the liver with internal mixed hypo and hyperechoic matrix, resembling a ball of wool.

pain due to traction on the mesentery and pressure effects on adjacent organs.

Hepatomegaly, nausea, vomiting and right upper abdominal or epigastric pain are the symptoms of liver hydatid disease. Possible cyst leakage or rupture leads to systemic immunological responses. Secondary disease can be caused by rupture in the peritoneal cavity. The intraperitoneal and mesenteric hydatid disease was caused possibly by the rupture of small daughter cyst from the exterior of the main liver cyst to the peritoneum in case our patient.¹⁰ Although

the patient had not exhibited signs of anaphylaxis in the past, he had not undergone any other abdominal procedure or suffered from abdominal trauma. Retrograde spread from the liver via the hepatic portal vein into the peritoneal cavity was also referred.

The advent of more sophisticated imaging techniques, like contrast CT and MRI, improved the diagnostic accuracy. Improved diagnostic accuracy aids the clinician to differentiate between other space occupying lesions and helps in formulation of treatment plan for the individual patient. Ultrasonography is the first choice for investigation. The ultrasonographic (US) appearance of hydatid cysts may vary. CT helps in better delineation of the intra peritoneal cystic lesions. Some of the cysts show wall calcification which are better seen on CT images. Some of them show internal septations and some of them show daughter cysts within. No cystic lesions were seen in the lungs. Antibody assays are useful in confirming a presumptive radiologic diagnosis.

The therapy of choice for disseminated hydatid disease is medical. The treatment in hydatid aims to completely eliminate the parasite. It is essential to prevent recurrence and reduce mortality. Albendazole (ABZ) and Mebendazole (MBZ) are the benzimidazole compounds (BMZs) used for the treatment of hydatid disease.² BMZs may be used alone for inoperable patients or for the treatment of small (<5

cm) cysts. ABZ is considered the drug of choice, because it is more active in vitro and it has a better gastrointestinal absorption and bioavailability.

CONCLUSION

Disseminated intra-abdominal hydatid disease is an unusual manifestation. Presence of Hydatid Cyst in an unusual location along with atypical imaging findings may complicate the differential diagnosis. Nevertheless, familiarity with imaging findings, especially in patients living in endemic regions, is advantageous in this context.

Abbreviations

HD: Hydatid disease; HC: Hydatid cyst; USG: ultrasonography; CT: Computed tomography.

Declarations

Ethics approval and consent to participate:

The present study was approved by the ethical board of the hospital in which the study was performed. The patient reported in this article had signed a written informed consent form. This case report was a reporting of a case in a medical educational centre, in which all patients are informed that they may be subjects of scientific experiments and are informed of the ethical codes of conducts. This study was in compliance to the latest version of the Helsinki Declaration.

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