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Case Report

Combined Hepatic and Gastric Hydatid Cyst in a 35 Year Old Male- A Rare Case Report

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Abstract:

Hydatid disease (cystic echinococcosis) is a helminthic infection caused by the larval stages of Echinococcus granulosus. This disease mainly affects the liver followed by lungs, kidney, bones, and brain. Simultaneous involvement of two organs occurs in about 5–13% of the cases. Gastrointestinal echinococcosis may result from a direct digestive localization of hydatid cyst but most often results from the rupture or fistulization in the digestive tract from other sites like liver. Involvement of the stomach remains an exceptional entity. A 35 year old male presented to the Surgery Department of Shaheed Suhrawardy Medical College and Hospital with the complaints of mild epigastric pain and occasional vomiting for one year. Per abdominal examination showed a non tender epigastric lump. CT scan of abdomen demonstrated a multiloculated cystic lesion in the right lobe of liver and another in the lesser sac in front of pancreas. Exploratory laparotomy was done which revealed a multiloculated cystic lesion in the right lobe of liver and another cyst attached to the posterior wall of stomach. Deroofing followed by irrigation with scolicidal agent and omentoplasty was done for both the cysts. His postoperative recovery was uneventful.

Keywords: Hydatid cyst, gastrointestinal echinococcosis, liver, stomach

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Introduction:

Hydatid disease (cystic echinococcosis) is a helminthic infection caused by the larval stages of Echinococcus granulosus and Echinococcus multiocularis.[1] This disease mainly affects the liver (70%) followed by lungs (15–47%), kidney (2–4%), bones and brain. Nevertheless, this can be found anywhere in the body.2 Simultaneous involvement of two organs occurs in about 5–13% of cases.[2]

Most of the time, hydatid disease is asymptomatic for a long period of time as the cysts grow very slowly. Cyst may be solitary or multiple. Clinical presentation depends on the number of cysts, size, location and possible compression of adjacent structures. Intra-abdominal hydatid disease may have a vague abdominal mass and pain due to pressure effects on adjacent organs or traction of mesentery.[3] The right upper abdominal or epigastric pain, nausea, vomiting and hepatomegaly are common symptoms and signs of hepatic hydatid cyst. Cyst rupture or leakage may cause systemic immunological reactions.[3] Diagnosis of hydatid cyst can be made on the basis of history of exposure, serological tests and radiological images. On the basis of ultrasound imaging findings, World Health Organization (WHO) developed cystic echinococcosis (CE) classification system in 2001.[4] Computed tomography of the hydatid cysts has a high sensitivity (95–100%).[5] Well-circumscribed, hypodense round lesions without contrast enhancement can be seen in contrast-enhanced CT. Calcification of the cysts can be present in 30% of all cases at the time of diagnosis.[6] Besides radiological methods, serological tests are gaining popularity to confirm a suspected radiologic diagnosis.

Gastrointestinal echinococcosis may result from a direct digestive localization of hydatid cyst but most often results from the rupture or fistulization in the digestive tract from other sites like liver. There have been reports of perforations and fistulizations of hydatid cyst to biliary tree, colon and duodenum.[7]

Stomach hydatidosis is quite rare, with a few cases described in the literature.8 The mechanism of infestation is not clear. For stomach, lymphatic or systemic circulation dissemination has been implicated as a possible route for organ involvement. Rupture and fistulization is also another possibility.[8]

Target of treatment is the inactivation of infectious scolices and germinative membranes. Surgical options may be divided into radical (pericystectomy and organ resection) and conservative approaches (deroofing or capitonnage with omentoplasty).[9] Minimally invasive surgical approaches by utilizing laparoscopic techniques, have also been employed for patients with hydatid disease. Image-guided percutaneous puncture, aspiration of the liquid contents and injection of a protoscolicidal agent (e.g., 95% ethanol or hypertonic saline) are alternative techniques for management of hydatid cyst.[10] A perioperative administration of a benzimidazole compounds like albendazole or mebendazole are also recommended to reduce the risk of anaphylactic reactions and prevent recurrence.[11]

Here we present a case of combined hepatic and gastric hydatid cyst which was managed successfully by surgery.

Case Summary:

A 35 year old male presented to the Surgery Department of Shaheed Suhrawardy Medical College and Hospital with the complaints of mild epigastric pain for the last one year. He also mentioned about gradual abdominal distension in the same region for same duration. There was a history of occasional vomiting after taking food. On query he mentioned about owning two dogs in his residence. On examination the patient was non anaemic, non icteric. His vitals were within normal limits. Per abdominal examination revealed a slightly mobile non tender lump about 10×8 cm occupying in the epigastric region. Other systemic examination revealed no abnormality. His blood reports including complete blood count, liver function and renal function tests showed normal findings. He was positive (IgG) for Ecchinococcus antibody. CT scan of abdomen demonstrated multiloculated cystic lesion in the right lobe and in the lesser sac in front of the pancreas abutting the wall of stomach indicating presence of hydatid cyst.(Fig-1). The patient took albendazole for 3 months but there was no improvement. So a laparotomy was planned. Per operatively there were hydatid cysts in the right lobe and inferior surface of the liver. The cyst in the lesser sac was found to be attached to the posterior wall of stomach (Fig-2). Both the cysts were deroofed, daughter cysts were evacuated and thorough

irrigation with hypertonic saline was done followed by omentoplasty. A drain was kept in hepatorenal pouch. His post-operative period was uneventful.

Discussion:

Hydatid disease is a unique parasitic disease that is endemic in many parts of the world which is caused by Echinococcus infection. It mainly affects the liver and presents several complications like rupture, fistula formation and infection.[11] Simultaneous involvement of liver and bowel wall especially stomach remains an exceptional entity which is observed in our case.

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, after ingestion by an intermediate host (sheep, goat, swine, cattle, horses, and camel), hatch in the small bowel. These eggs release an oncosphere that penetrates the intestinal wall and migrates through the circulatory system into various organs, especially the liver and lungs.[12] Our patient also gave history of having two dogs in his house which indicated that the patient might be infected with Echinococcus.

The signs and symptoms of liver hydatid disease, when present, include hepatomegaly, right upper abdominal or epigastric pain, nausea and vomiting. Cyst leakage or rupture may lead to systemic immunological responses. Rupture in the peritoneal cavity may also cause secondary disease. Our patient also had similar symptoms including upper abdominal pain and epigastric lump.

The stomach is an unusual site for a hydatid cyst. According to surgical records of hepatic hydatid cysts, 0.29% were ruptured into the gastrointestinal tract and 0.15% into the duodenum.[13] In a multicentric study conducted by Zaouche on hydatid cyst showed only 3 cases were ruptured into the hollow viscus.[14] It is believed that hydatid cyst communication with the bowel lumen depends on: cyst location, infection and close contact. Communication between the hydatid cyst and any part of GI tract (the stomach, duodenum and transverse colon) is more likely to occur when the cyst is located on the inferior surface of the liver.[14] However, the communication is not always visualized, often related to hydatid membranes obstructing the communication, in which case the diagnosis is only made during operation.[15] In our case similar findings were noted and gastric hydatid cysts were diagnosed peroperatively.

Currently, surgery is the standard treatment for complicated cysts as well as extensive, large and symptomatic uncomplicated cysts. Preoperative medical treatment with albendazole is recommended because it decreases the viability of the cysts. There is little specific data on the benefits of postoperative or perioperative use of medical treatment. But most authors agree on the effectiveness of postoperative medical treatment in reducing the risk of recurrence.[16] Our patient was also managed surgically with perioperative albendazole administration.

Conclusion:

Hydatid disease is a significant public health problem in under developed and developing countries affecting mostly the liver and lungs. Combined hepatic and gastric hydatid cyst is a very rare clinical entity, which should be kept in mind for patients with an intra-abdominal mass. It is an extremely unusual condition and should be included in the differential diagnosis of liver, stomach, splenic and pancreatic mass or cystic lesions especially in endemic areas. A prompt diagnosis and appropriate surgical treatment of hydatid cysts will provide a better outcome to the patients.

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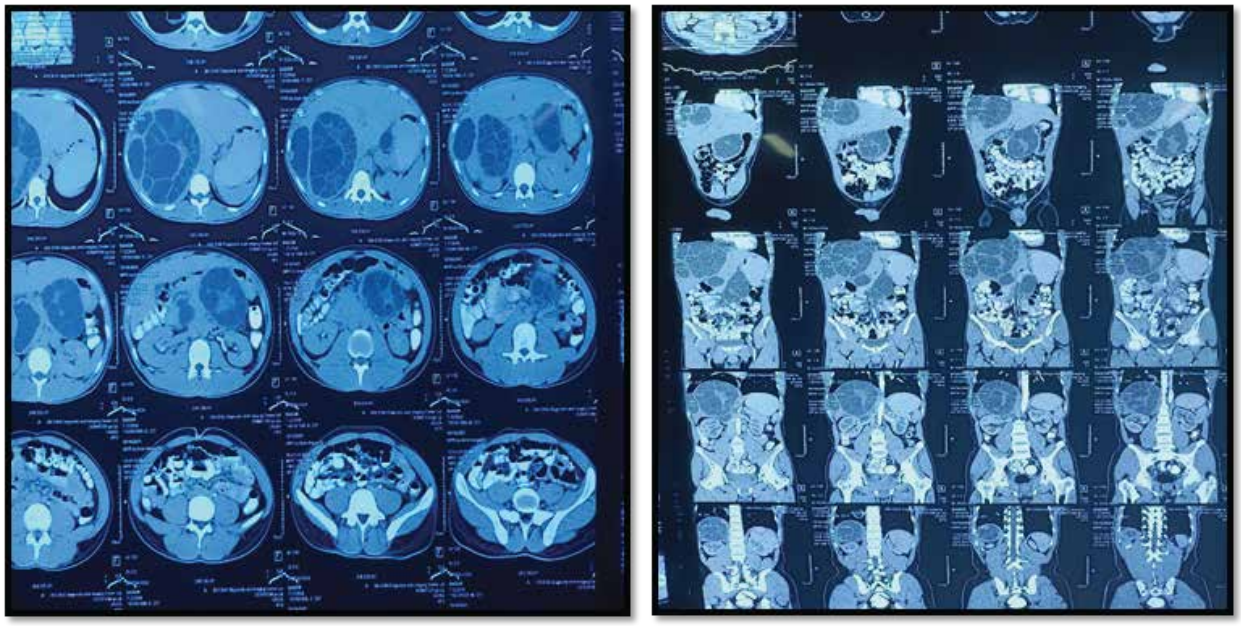

Fig-1 CT scan of abdomen showing multiloculated cysts in right lobe and under surface of liver.

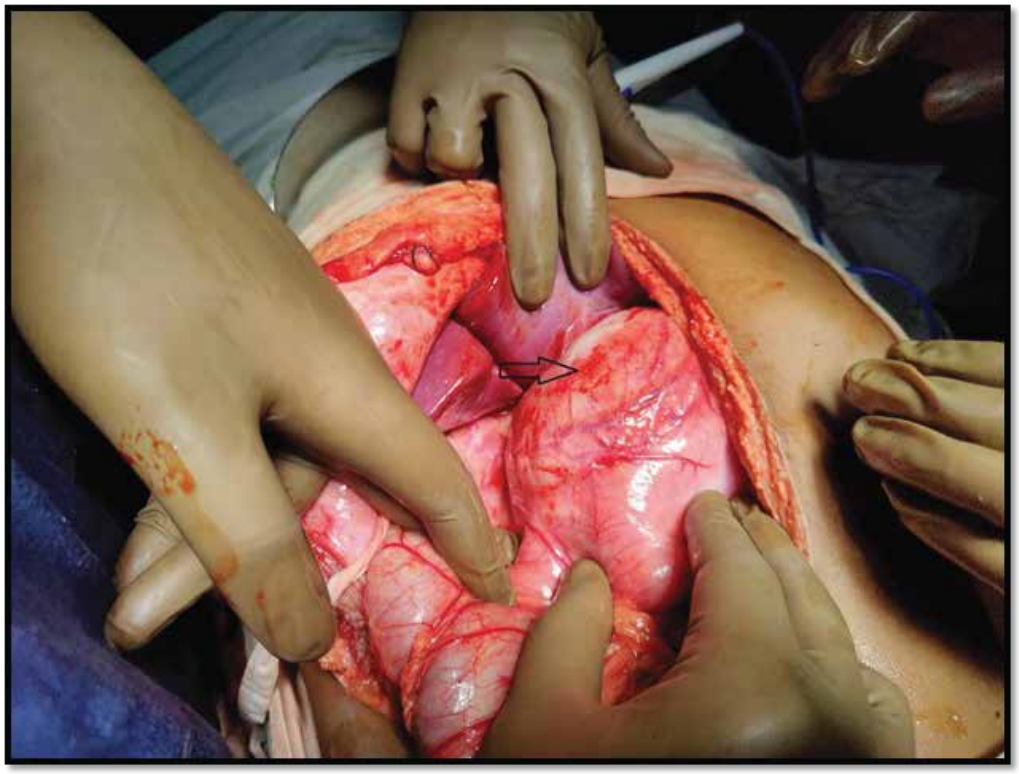

Fig-2 showing hydatid cyst attached to the posterior wall of stomach

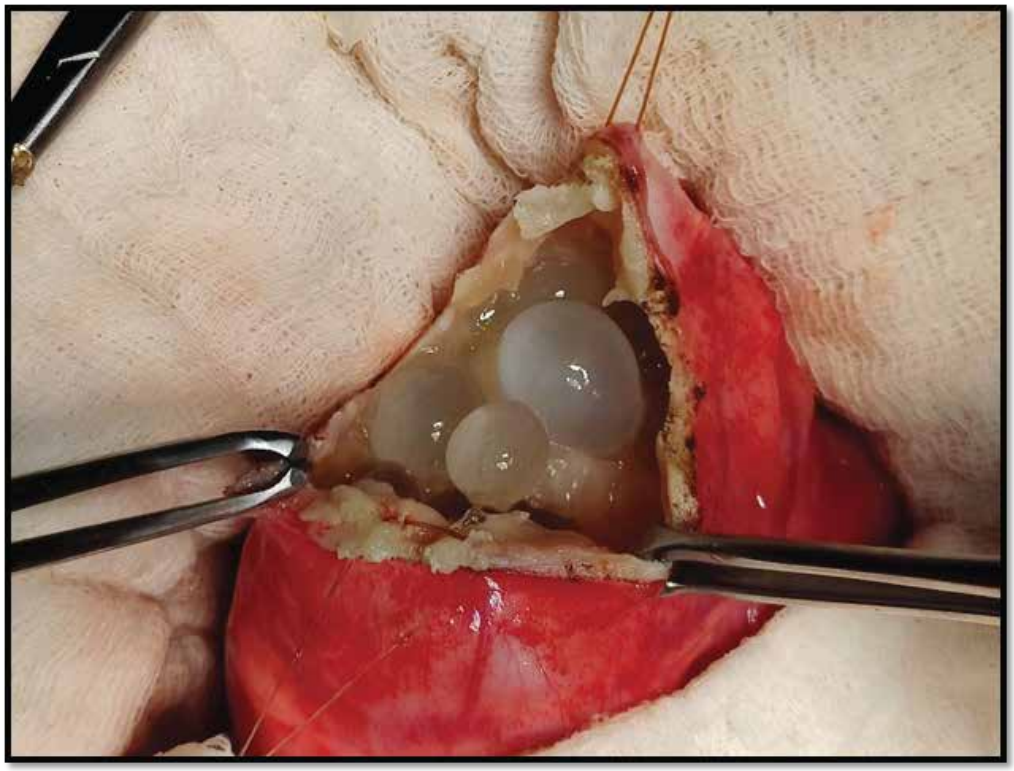

Fig-3 showing multiple daughter cysts within the stomach cyst.