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**Case Report**

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# Laparoscopic Management of Primary Omental Hydatid Cyst mimicking Gastrointestinal Stromal Tumour (GIST): A Case Report

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## Abstract

Hydatid disease, a parasitic zoonosis caused predominantly by *Echinococcus granulosus*, typically affects the liver and lungs. Primary omental involvement is rare and can mimic other intra-abdominal masses. We present a case of a woman in her mid-30's with an incidentally detected intra-abdominal mass. Contrast-enhanced CT (CECT) of the abdomen suggested a well-defined mass arising from the greater omentum, radiologically diagnosed as a gastrointestinal stromal tumour (GIST). She underwent successful laparoscopic excision of the mass. Histopathological examination revealed a hydatid cyst. The postoperative period was uneventful, and the patient was commenced on albendazole therapy. To our knowledge, this is the first such case managed laparoscopically reported from India. Hydatid disease should be considered in the differential diagnosis of cystic intra-abdominal masses, even when imaging is suggestive of GIST. Laparoscopic excision is feasible and safe in experienced hands. This case underscores the importance of preoperative suspicion, especially in endemic regions.

**Keywords:** ***Hydatid cyst, GIST, laparoscopy, minimally invasive surgery.***

## Introduction

Hydatid disease is a chronic parasitic infection caused by the larval form of Echinococcus granulosus. It remains endemic in many parts of the world, including the Mediterranean basin, the Middle East, South America, and India [1]. Humans serve as accidental intermediate hosts and acquire the infection through ingestion of Echinococcus eggs from contaminated food, water, or close contact with infected animals, primarily dogs [2]. It commonly affects the liver (60-70%) and lungs (20-30%) [3]. Primary peritoneal involvement is rare, and primary omental hydatid cysts are even less frequently encountered. These are rarely reported and if present, are usually secondary to hepatic or splenic hydatid disease [4,5]. The clinical presentation is often non-specific, and imaging may not always be diagnostic, leading to misdiagnosis. In endemic regions, any cystic lesion within the abdomen should prompt suspicion of echinococcosis, including those in atypical locations. Preoperative administration of benzimidazole-class agents, as per established protocols, along with appropriate intraoperative precautions such as use of scolicidal agents, should be planned accordingly.

## Case Report

A woman in her 30's presented to the outpatient department with vague abdominal discomfort persisting for three months. She denied any significant weight loss, altered bowel habits, vomiting, or constitutional symptoms. Her past medical and surgical history was unremarkable, and she had no known exposure to livestock or pets. Clinical examination revealed a soft, non-tender abdomen with no palpable mass or signs of peritonism. Routine hematological and biochemical parameters were within normal limits. An abdominal ultrasound revealed a well-defined hypoechoic lesion in the left hypochondrium, prompting further evaluation with contrast-enhanced computed tomography (CECT). CECT of the abdomen and pelvis demonstrated a peripherally enhancing cystic lesion with thick internal septations and few specks of peripheral calcification, measuring 5.6 x 4.8 cm in the left hypochondrium, adjacent to proximal jejunal loops. The radiological differential diagnosis favored a gastrointestinal stromal tumor (GIST) due to the lesion's size, vascularity, and proximity to the bowel wall. There was no evidence of hepatic or splenic involvement.

The initial radiological and clinical impression in our case was strongly suggestive of a gastrointestinal stromal tumour (GIST), given the solitary nature of the lesion, its well-circumscribed appearance, and its location along the greater omentum. GISTs are the most common mesenchymal tumours of the gastrointestinal tract


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and may rarely arise from the omentum or mesentery. The lesion was hypo-enhancing with solid components, lacking daughter cysts, and demonstrated no communication with hepatic or intestinal structures - further reinforcing the suspicion of an extra-intestinal GIST. Although hydatid disease is endemic in our region, its occurrence in the omentum as a primary site is exceedingly rare, accounting for less than 2% of abdominal Echinococcosis. Radiological features of hydatid cysts in unusual locations may mimic neoplastic lesions. In our case, the cyst's appearance was consistent with GIST, which delayed the consideration of parasitic etiology. The WHO classification for cystic echinococcosis based on ultrasound was not applicable here due to atypical morphology [4].

The patient was planned for elective laparoscopic excision of the suspected GIST. Under general anesthesia, pneumoperitoneum was established, and a three-port laparoscopic approach was used. Intraoperatively, a mass was identified within the omentum towards the left hypochondriac region, distinct from the bowel wall with minimal attachment to the mesentery of the transverse colon, and no adhesions to adjacent organs [**Fig.1**]. No other cysts or abnormalities were identified in the liver, spleen, or peritoneal cavity. The specimen was carefully dissected all around using harmonic scalpel and bipolar cautery, and retrieved using an endoscopic retrieval bag via pfannensteil incision to prevent contamination.

Postoperative recovery was uneventful, the patient resumed normal diet and bowel activities by postoperative day one, and was discharged on postoperative day two. Final histopathological examination of the excised specimen revealed a laminated acellular eosinophilic cyst wall consistent with a hydatid cyst, with no viable scolices or evidence of secondary infection. A diagnosis of primary isolated omental hydatid cyst was made. The patient was subsequently started on albendazole 400 mg twice daily as per protocol. On further follow-up at one month the patient remained asymptomatic. To the best of our knowledge, this is the first reported case in India of a primary omental hydatid cyst mimicking a GIST on imaging and managed successfully with a laparoscopic approach.

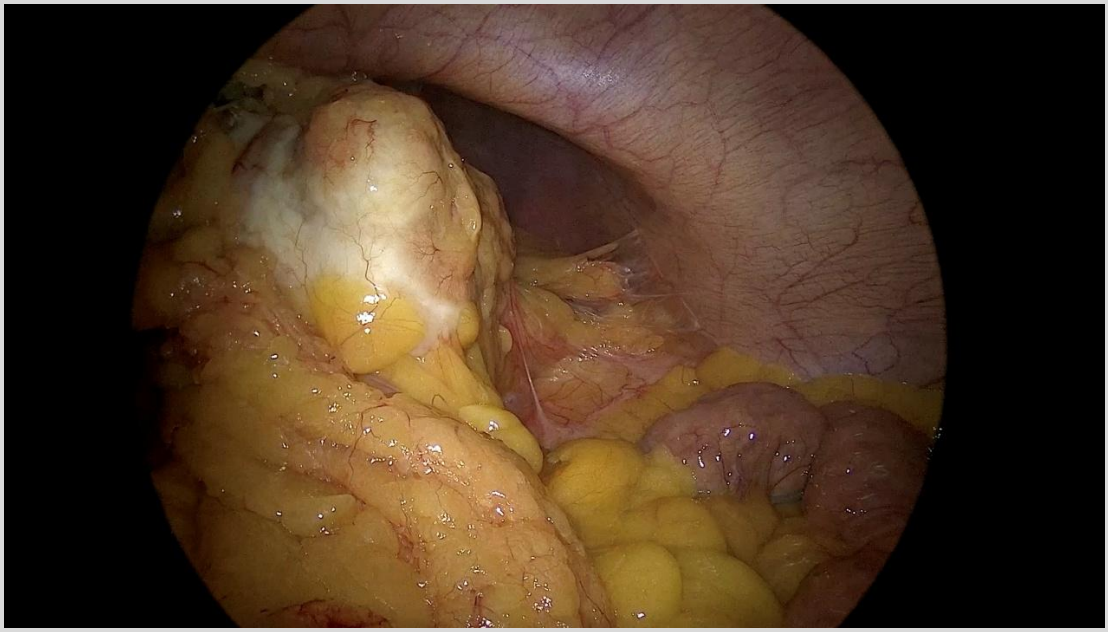

**Fig. 1: Laparoscopic view of primary omental hydatid cyst**

## Patient's perspective

When the doctors informed me of the possibility of a tumour, I was quite anxious and trusted them to remove it. I was hoping to undergo the surgery laparoscopically so that my recovery would be smooth. Thankfully, the surgery went well and I was back to my daily activities by the very next day, and the final biopsy report revealed that it was not a malignant tumour after which I was very much relieved. I sincerely thank my team of supportive doctors and hope that my story sheds light on this rare condition.

## Discussion

Primary omental hydatid cysts are exceptionally rare, accounting for <2% of all cases of abdominal hydatidosis. In the absence of hepatic or pulmonary cysts, such cysts may be misdiagnosed, particularly when imaging mimics neoplastic lesions such as GISTs. The pathogenesis of primary omental hydatid cysts is presumed to involve haematogenous or lymphatic spread of oncospheres following intestinal penetration [6] [**Fig.2**]. Balik et al. reported extrahepatic hydatid cysts in 8 of 27 patients, with only two omental cases, all managed by open surgery [7]. Radiological findings may be atypical in such cases, and serology may not be contributory.

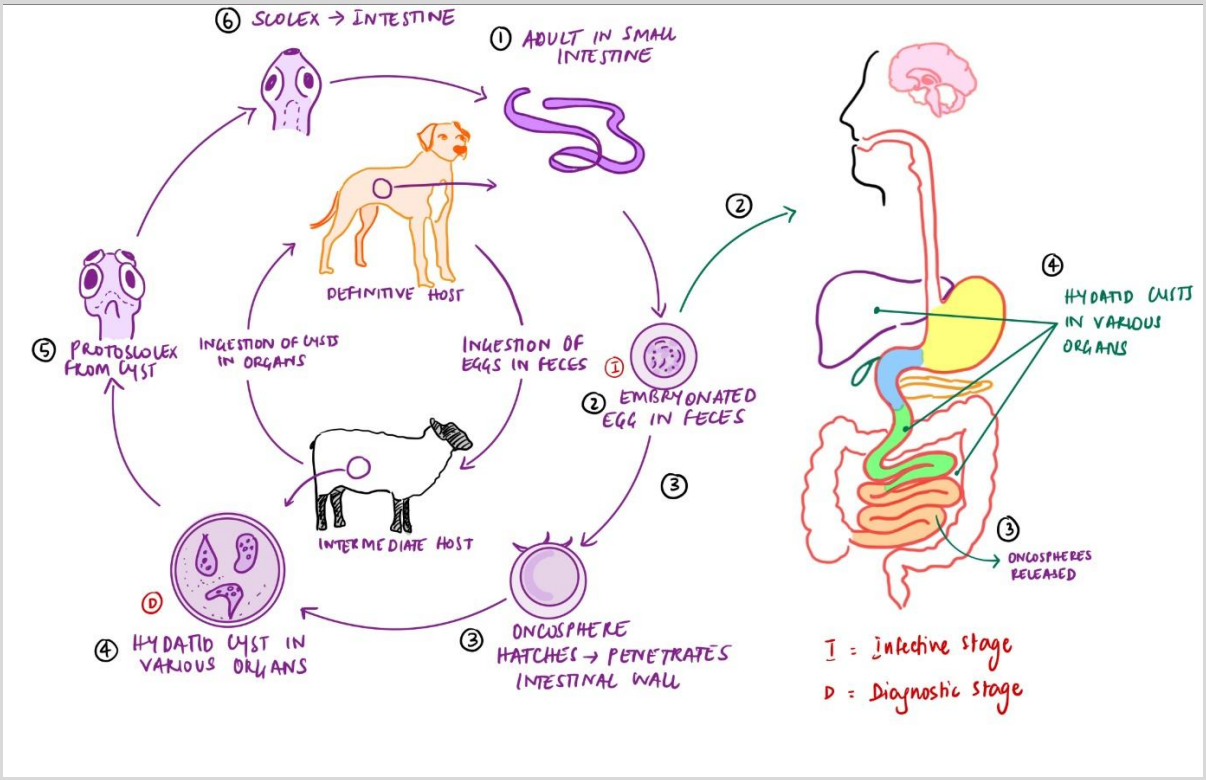


**Fig. 2: Life cycle of Echinococcus granulosus**

This case adds to the growing literature supporting the use of minimally invasive techniques for hydatid disease, even in rare and challenging locations. Laparoscopic approaches offer the advantages of reduced postoperative pain, shorter hospital stay, and better cosmesis. Although concerns about cyst rupture and peritoneal spillage remain, the use of endobags, preoperative albendazole therapy, and meticulous handling have mitigated these risks [9]. Albendazole therapy is typically continued postoperatively for 3-6 months to prevent recurrence. While open surgery remains the mainstay for complicated or giant cysts, laparoscopic management has emerged as a safe and effective alternative in selected patients [11-13].

Although rare, some cases of primary hydatid cysts located in the mesentery or omentum have been successfully managed laparoscopically in different parts of the world. A growing number of reports from endemic regions - including Turkey, Iran, and North Africa - have demonstrated the incidence of primary omental, mesenteric and other intraabdominal locations of hydatid cysts, however very few have detailed laparoscopic management of the same. Kushwaha JK et al. reported a case of a primary mesenteric hydatid cyst managed with preoperative benzimidazole therapy for one month, followed by open surgery and excision of the cyst, with an uneventful recovery [10]. Mihetiu A et al. described the laparoscopic treatment of multiple peritoneal hydatid cysts, including omental, hepatic and mesenteric sites, and described a literature review of the same. Only two other cases have reported successful laparoscopic management of primary omental hydatid cysts [11-13].

To our knowledge, this is the first case reported from India of a laparoscopically managed primary omental hydatid cyst misdiagnosed as GIST. This case is unique in that it was managed entirely laparoscopically and the diagnosis of hydatid disease was made postoperatively, underscoring the unpredictable nature of atypical hydatidosis and the importance of considering it in the differential diagnosis of intra-abdominal masses in endemic areas.

## Declaration

## Conflict of interest

None

## Funding/ financial support

Nil

## Ethics Approval

The study was approved by the Institute

## Availability of supporting data

All data available from the corresponding author on reasonable request.

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