ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/26jun1662

Extensive Intra-Abdominal Hydatidosis Despite Five Years of Intermittent Albendazole Therapy: Surgical Management of a Rare Case

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Publication Date: 2026/09/08

Abstract: Cystic Echinococcus is a neglected zoonotic disease caused by the larval stage of Echinococcus granulosus, commonly affecting liver and lungs and may rarely present as disseminated intra-abdominal disease with recurrent lesions despite medical therapy. We report the case of a 40-year-old male who was diagnosed with multiple intra-abdominal hydatid cysts in 2020 involving the liver, spleen, mesentery, peritoneum, and pelvis. The patient was treated with prolonged albendazole therapy and followed up regularly; however, serial imaging demonstrated persistent disease with multiple recurrences and progressive enlargement of cystic lesions. In 2026, imaging revealed a large multiloculated hydatid cyst in the right lobe of the liver with daughter cysts and focal hepatic capsular breach, along with multiple cysts in the spleen and widespread peritoneal, mesenteric, and pelvic involvement causing mass effect on adjacent structures. In view of extensive disease progression and failure to respond to medical management, the patient underwent definitive surgical intervention. This case highlights the challenges in managing disseminated hydatid disease, the potential for recurrence despite prolonged antiparasitic therapy, and the important role of surgery in patients with extensive or treatment-refractory disease.

Keywords: *Hydatid Disease, Echinococcosis, Intra-Abdominal Hydatidosis, Hydatid Cyst, Albendazole Failure, Surgical Management.*

How to Cite: Dr. J. G. Vagadiya; Dr. Kapil Chakrani; Dr. Disha Padhi; Dr. Devanshu Jaishwal (2026) Extensive Intra-Abdominal Hydatidosis Despite Five Years of Intermittent Albendazole Therapy: Surgical Management of a Rare Case. *International Journal of Innovative Science and Research Technology*, 11(6), 4085-4089. https://doi.org/10.38124/ijisrt/26jun1662

I. INTRODUCTION

Cystic hydatid disease is a zoonotic parasitic infection caused by the larval stage of Echinococcus granulosus, with the liver being the most commonly affected organ. Extensive intra-abdominal dissemination is rare and is associated with significant diagnostic and therapeutic challenges. Although Albendazole is effective in selected cases, advanced or disseminated disease often requires surgical management

➢ *Case Presentation:*

A 40 years male patient, presented to surgical OPD with complaints if abdominal pain since 6days. There was no history of fever, diarrhoea, GI bleeding, vomiting or weight loss.

Patient already had similar episode of abdominal pain in the past in 2020 for which patient was hospitalized. CECT (Abdomen + Pelvis) was done which revealed.

- 16.8*15.2*13cm large encapsulated cystic lesion in right lobe of liver *with peripheral calcification*, s/0 hydatid cyst.
- One of the daughter cysts within this large cystic lesion causes approx. 1.9cm hepatic capsular breach in segment VI of liver.
- Few cystic lesions seen in right subhepatic space

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- Multiple other cystic lesions seen in left lobe of liver, peri cholecystic region, adjacent to falciform ligament, in hepatoduodenal ligament region.
- Multiple cystic lesions in spleen, largest one is 7.8*7.1*6.4cm.
- Similar cystic lesions are also seen in mesentery and pelvic peritoneal cavity

Patient was then managed conservatively by giving Tab. Albendazole therapy (T. Albendazole (400) 1-1-1) for 3 months. Patient's symptoms relieved.

However around March 2025, patient again developed similar episode of abdominal pain. Abdomen ultrasound was done which revealed.

- Liver – multiple lesions seen in both lobes of liver largest one 14*12cm in right lobe with peripheral calcification
- Approx. 7*7cm sized similar cystic lesion seen in upper pole of spleen
- Multiple variable sized cysts seen in right and left iliac regions p/o hydatid cyst

Patient was again managed conservatively by taking the same T. Albendazole therapy for 3 months.

Patient has no other comorbidity, no operative history and no significant family history. On admission, patient was vitally stable with moderate tenderness over right hypochondrium. Blood investigations were within normal limits. Ultrasonography of abdomen revealed.

- Multiple variable sized cystic lesions in both lobes of liver, larger one 12*14cm in right lobe p/o hydatid cyst (CE 3b)
- Multiple cystic lesions with larger one 19*27mm at mid pole of spleen p/o hydatid cyst 2
- Multiple cystic lesions noted in pelvis region, larger 47*27mm noted at left iliac fossa (hydatid cyst 3b)

CECT (abdomen + pelvis) was done which revealed

- Approx. 125*113*145mm size of well-defined large encapsulated cystic lesion with internal septa noted in right love of liver.
- One of the daughter cysts within the large cystic lesion in segment VI of liver causes focal hepatic capsular breach for a length of 1.4cm.
- Few thin walled cystic lesions, larger one 24*44mm seen in the segment II of left lobe of liver
- Few cystic lesions noted in the upper and mid pole of spleen larger one approx. 44*40mm

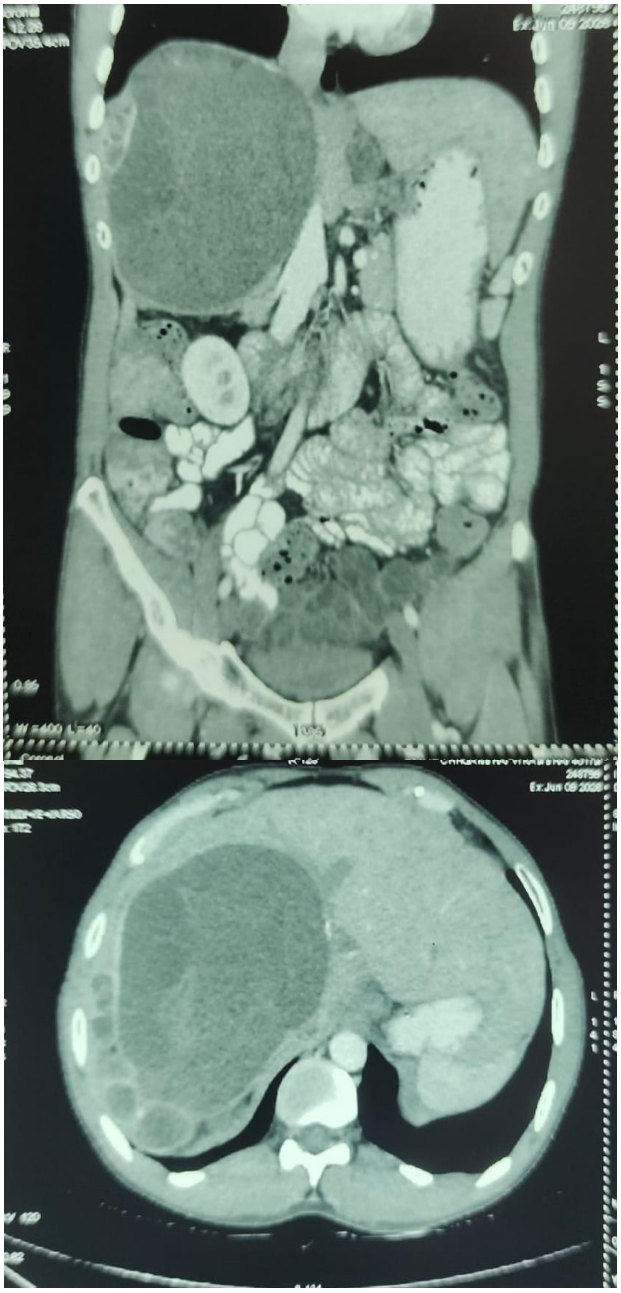

Fig 1 CECT (A+P) Showing Multiple Hydatid Cysts in Abdomen

Table 1 Comparison of CECT Findings done in Years 2020 and 2026

Feature	First Scan	Second Scan
Largest liver hydatid cyst (right lobe)	16.8 × 15.2 × 13 cm	12.5 × 11.3 × 14.5 cm
Morphology of liver cyst	Encapsulated cystic lesion with peripheral calcification and daughter cysts	Encapsulated cystic lesion with internal septa and daughter cysts
Hepatic capsular breach	Approximately 1.9 cm in segment VI	Approximately 1.4 cm in segment VI
Left lobe liver involvement	Multiple cystic lesions in left lobe	Few cystic lesions, largest 24 × 44 mm in segment II
Pericholecystic region	Absent	Present

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Falciform ligament involvement	Absent	Present
Hepatoduodenal ligament involvement	Absent	Present
Additional upper abdominal involvement	Absent	Hepatogastric region cysts
Splenic involvement	Multiple cysts; largest 7.8 × 7.1 × 6.4 cm	Few cysts; largest 4.4 × 4.0 cm
Mesenteric involvement	Absent	Present
Pelvic hydatid cyst	Absent	Large pelvic cyst measuring 5.5 × 7.9 × 6.2 cm causing bladder mass effect
Peritoneal involvement	Absent	Multiple cysts in pelvic region and left iliac fossa
Right hypochondriac lesions	Absent	Multiple small cysts in right hypochondriac region

Patient underwent exploratory laprotomy with deroofing of right hepatic hydatid cyst and excision of splenic and intraperitoneal hydatid cysts with appendectomy. Cysts excised were sent for histopathological examination. A 30 Fr abdominal drain was kept in the evacuated right hepatic cyst and another 30Fr drain kept in the subhepatic region. Another 30F drain kept in the pelvic region. Immediate post-operative period was uneventful and patient was shifted to ward. Thereafter pelvic drain and subhepatic drain were removed on POD 5.

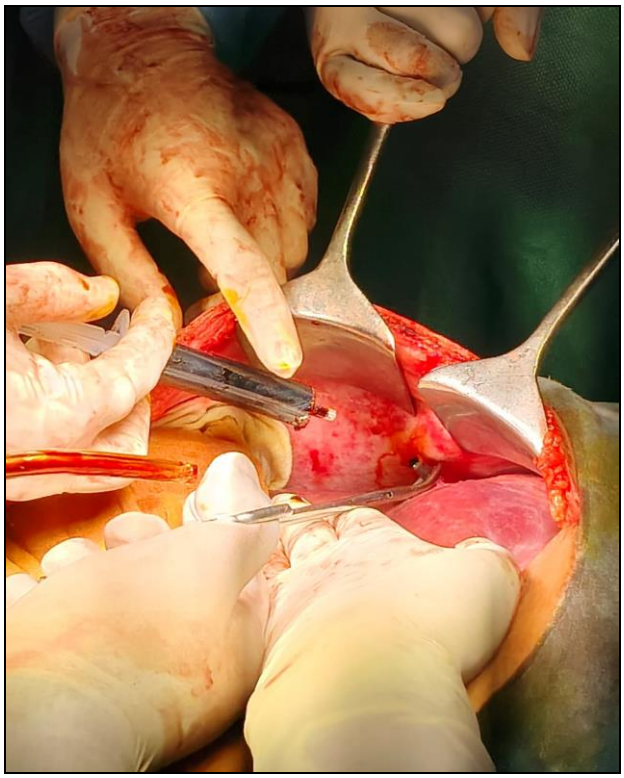

Fig 2 Intraoperative Image of Irrigation of Hepatic Hydatid Cysts with 10%Betadene Solution

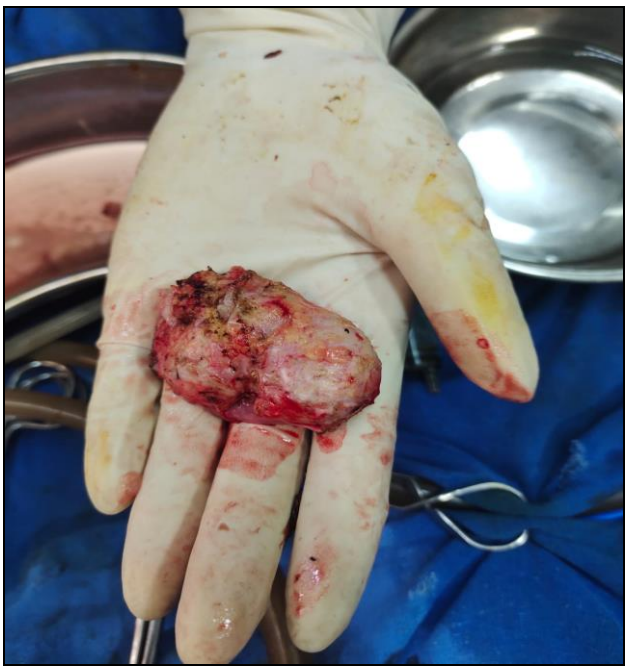

Fig 3 Intraoperative Images Showing Excised Hydatid Cysts

The patient was then kept of post-operative cyclical Albendazole therapy to prevent recurrence. T.Albendazole (400) given TDS for 28days, followed by drug free interval for 14 days and then resuming the 28 days drug interval. 6 cycles are done to ensure no recurrence, drug free interval helps to reduced hepatotoxicity and improves tolerability.

II. DISCUSSION

Hydatid disease is a zoonotic parasitic infection caused primarily by *Echinococcus granulosus*. The disease remains endemic in many regions of the world, particularly in areas where livestock farming and close contact with dogs are common. Humans act as accidental intermediate hosts and acquire the infection through ingestion of parasite eggs. Following intestinal absorption, the larvae disseminate via the portal circulation and develop into hydatid cysts in various organs.

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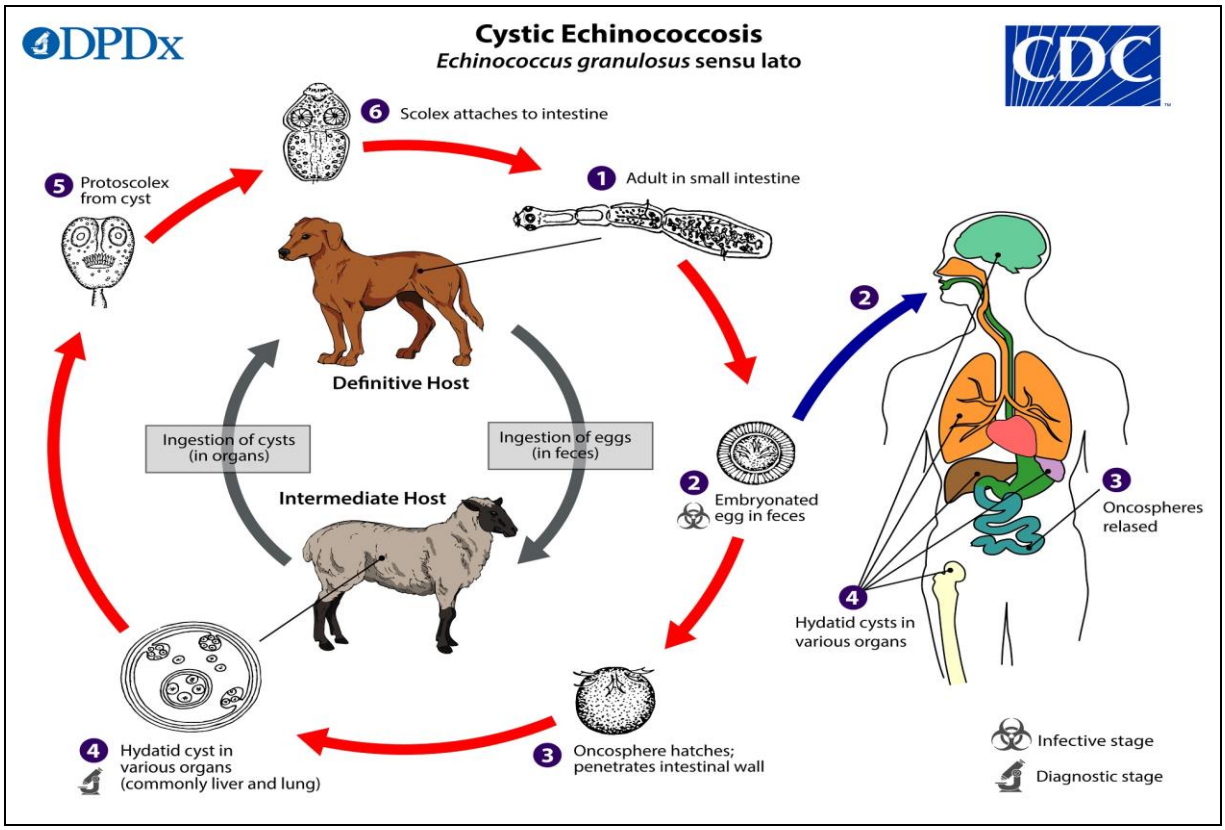

Fig 4 Life Cycle of Echinococcus Granulosus

The liver and lungs are the most commonly affected sites, accounting for approximately 90% of cases. However, hydatid cysts may occur in almost any organ, including the spleen, kidneys, peritoneum, brain, bone, and soft tissues. Multiple hydatid cysts are less common than solitary lesions and may result from either simultaneous primary infestation of multiple organs or secondary dissemination following rupture of a primary cyst. The presence of multiple cysts presents a diagnostic and therapeutic challenge due to variable clinical manifestations and the risk of complications.

Clinical presentation depends on the size, number, and location of the cysts. Many patients remain asymptomatic for years because of the slow growth of the parasite. Symptoms usually arise from mass effect on adjacent structures, secondary infection, rupture, or compression of vital organs. In cases with multiple cysts, symptoms may be nonspecific, leading to delays in diagnosis.

Imaging plays a pivotal role in diagnosis. Ultrasonography is often the initial modality, particularly for hepatic involvement, while computed tomography and magnetic resonance imaging provide superior delineation of cyst morphology, number, distribution, and complications. Characteristic findings such as daughter cysts, detached membranes, and calcification strongly support the diagnosis. Serological tests may complement imaging findings, although sensitivity varies according to the organ involved and cyst stage.

Management of multiple hydatid cysts requires an individualized approach. Treatment options include surgery, percutaneous interventions, antiparasitic therapy, or a combination of these modalities. Surgical excision remains the treatment of choice for accessible symptomatic cysts, particularly when complications such as rupture, infection, or compression are present. Albendazole therapy is recommended both preoperatively and postoperatively to reduce cyst viability, minimize recurrence, and manage residual disease. In patients with disseminated or multiple-organ involvement, prolonged medical therapy may be necessary.

Recurrence remains a significant concern, especially in cases with multiple cysts or intraoperative spillage of cyst contents. Careful surgical technique, use of scolicidal agents, and appropriate antiparasitic therapy are essential to reduce recurrence rates. Long-term clinical and radiological follow-up is therefore recommended.

In conclusion, multiple hydatid cysts represent an uncommon but clinically important manifestation of echinococcosis. Early recognition through imaging, accurate assessment of disease extent, and a multidisciplinary treatment strategy are crucial for achieving favorable outcomes and preventing recurrence.

III. CONCLUSION

This case highlights the limitations of prolonged medical therapy in extensive disseminated intra-abdominal hydatid disease. Surgical intervention remains

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an effective treatment modality in patients with persistent disease despite adequate medical management. Early recognition of treatment failure and timely surgical management can improve patient outcomes and prevent disease-related complications, mainly cystobiiliary communication to prevent future obstructive jaundice.

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