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Research Article

Hepatic Hydatid Disease: A Case Series of Three Patients Managed Surgically

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ABSTRACT
Background: Hydatid disease is a parasitic zoonosis caused by the larval stage of *Echinococcus granulosus*(Jarvis, 2025). The liver is the most commonly affected organ, accounting for approximately 60–70% of cases(Derbel et al., 2012). Although many patients remain asymptomatic for prolonged periods, enlarging cysts may cause symptoms and complications requiring surgical intervention(Bayrak & Altıntaş, 2019).
Case Presentation: We present a series of three patients diagnosed with hepatic hydatid cysts. A 42-year-old male presented with right upper abdominal pain and was found to have an 8 × 7 cm cyst in segment VI. A 35-year-old female presented with abdominal fullness and was diagnosed with a 7 × 6 cm cyst in segment IV. A 50-year-old male presented with abdominal pain and nausea and was found to have a 9 × 8 cm cyst in segment III. All patients underwent preoperative albendazole therapy followed by open surgical management consisting of cyst evacuation with omentoplasty or drainage.
Results: All three patients underwent successful surgical treatment without intraoperative complications. Postoperative recovery was uneventful, and all patients received postoperative albendazole therapy. No recurrence was observed during follow-up.
Conclusion: Hepatic hydatid disease remains a significant health problem in endemic regions(Bachar et al., 2025). Early diagnosis through imaging and timely surgical intervention combined with antiparasitic therapy provides excellent outcomes(Bachar et al., 2025; Nunnari, 2012).

Keywords: Hydatid Cyst, Echinococcus Granulosus, Liver Hydatid Disease, Omentoplasty, Hepatic Cyst, Surgery.

INTRODUCTION

Hydatid disease is a chronic parasitic infection caused primarily by Echinococcus granulosus(Mobarak et al., 2025). It remains endemic in many developing countries, including India, where close contact between humans, dogs, and livestock facilitates transmission(Craig et al., 2007; Mathur et al., 2016). Humans act as accidental intermediate hosts after ingesting parasite eggs shed in dog feces(Mohamed et al., 2017).

The liver is the most frequently involved organ due to its role as the first filter of portal circulation(Devi et al., 2018). Clinical manifestations depend on cyst size, location, and associated complications(Derbel et al., 2012). Surgical treatment remains the standard of care for large symptomatic cysts, although medical therapy and minimally invasive techniques have emerged as alternative treatment modalities(Gavara, 2015; Miheţiu et al., 2024).

This case series describes the clinical presentation, radiological findings, surgical management, and outcomes of three patients with hepatic hydatid disease treated at our institution.

Case Series

Case 1

A 42-year-old male presented with right-upper-quadrant abdominal pain for three months. There was no history of fever, jaundice, or weight loss.

Ultrasonography and contrast-enhanced computed tomography (CECT) of the abdomen demonstrated a hydatid cyst measuring 8 × 7 cm located in segment VI of the liver.
The patient received preoperative albendazole therapy. Open cystectomy was performed after isolation of the operative field with scolicidal packs. Following aspiration and evacuation of cyst contents, omentoplasty obliterated the residual cavity.
The postoperative period was uneventful, and the patient was discharged on albendazole therapy.

Case 2

A 35-year-old female presented with abdominal fullness and intermittent discomfort. Clinical examination was unremarkable except for mild right upper abdominal tenderness.
CECT abdomen revealed a hydatid cyst measuring 7 × 6 cm in segment IV of the liver. The patient underwent partial cystectomy with evacuation of daughter cysts followed by omentoplasty. Histopathological examination confirmed hydatid disease.
Recovery was uneventful, and postoperative albendazole therapy was continued.

Case 3

A 50-year-old male presented with right upper abdominal pain associated with nausea. Laboratory investigations were within normal limits.
Contrast-enhanced CT imaging showed a hydatid cyst measuring 9 × 8 cm in segment III of the liver.
The patient underwent open cyst evacuation and cavity drainage. No cystobiliary communication was identified intraoperatively.
The postoperative course was uncomplicated, and the patient remained asymptomatic during follow-up.

Surgical Technique

The surgical procedure in all cases followed standard principles:

1. Isolation of the operative field using pads soaked in scolicidal solution.
2. Controlled aspiration of cyst fluid.
3. Injection of a scolicidal agent into the cyst cavity.
4. Evacuation of daughter cysts and germinal membrane.
5. Inspection for biliary communication.
6. Management of the residual cavity using omentoplasty or drainage.

Figures

Figure 1A–C: Preoperative MRI and CT Demonstrating a Giant Multivesicular Hepatic Hydatid Cyst with Numerous Daughter Cysts.

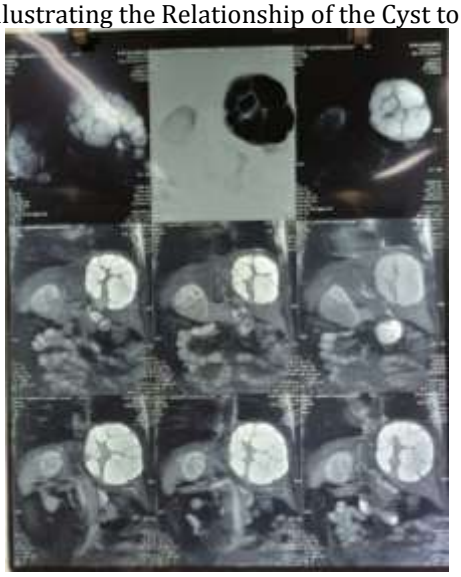
Figure 2: Intraoperative Exposure of the Hepatic Hydatid Cyst.

Figure 3: Excised Hepatic Hydatid Cyst Specimen.

Figure 4: Daughter Cysts and Laminated Membrane Following Evacuation.

Figure 5: Gross Specimen Showing Multiple Daughter Cysts.

Figure 6: MRCP Illustrating the Relationship of the Cyst to the Biliary Tree.



DISCUSSION

Hydatid disease remains an important public health concern in endemic regions(Borhani et al., 2020). The liver is involved in approximately two-thirds of cases(Greco et al., 2019). Patients may remain asymptomatic for years, with symptoms appearing only when cysts enlarge significantly(Juan et al., 2019).

Imaging studies play a crucial role in diagnosis(Alshoabi et al., 2023). Ultrasonography serves as the initial investigation, whereas CT scanning provides superior anatomical delineation and aids surgical planning(Marrone, 2012).

Treatment options include medical therapy, PAIR (Puncture-Aspiration-Injection-Reaspiration), laparoscopic surgery, and open surgery(Vidoura et al., 2017). Large symptomatic cysts are generally managed surgically(Bayrak & Altıntaş, 2019). The use of albendazole before and after surgery reduces parasite viability and lowers recurrence rates(Arif et al., 2008; Morris, 1987).

In our series, all patients were managed successfully with open surgery and adjunctive albendazole therapy. No perioperative complications or recurrence was observed during follow-up.

CONCLUSION

Hepatic hydatid disease should be considered in patients presenting with cystic liver lesions,

particularly in endemic areas(Polat et al., 2003). Imaging modalities facilitate accurate diagnosis and treatment planning(Alshoabi et al., 2023; Marrone, 2012). Surgical intervention combined with perioperative albendazole therapy remains an effective treatment strategy, resulting in excellent clinical outcomes and low recurrence rates(Barreto et al., 2025; Costea et al., 2024).

Declarations

Patient Consent

Written informed consent was obtained from all patients for publication of clinical data and images.

Conflict of Interest

The authors declare no conflict of interest.

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