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Primary Peritoneal Hydatid Cyst Adjacent to the Hepatic Hilum Mimicking a Hepatic Hydatid Cyst: A Rare Diagnostic and Surgical Challenge

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Abstract

Hydatid disease is a parasitic infection caused by *Echinococcus granulosus* that predominantly involves the liver and lungs. Primary peritoneal hydatid cyst is an exceptionally rare presentation that mimics other intra-abdominal masses because of its nonspecific clinical features and unusual anatomical location.

We report the case of a 32-year-old man with no significant medical history who presented with intermittent right upper quadrant and epigastric pain for one year. Abdominal computed tomography revealed a multiloculated cystic lesion adjacent to the hepatic hilum, initially suggesting an exophytic hepatic hydatid cyst. However, surgical exploration demonstrated that the lesion originated from the peritoneum, with no hepatic involvement. Because of its close relationship with the hepatic hilum and major vascular structures, conservative surgical treatment was performed, followed by postoperative albendazole therapy. The patient's recovery was uneventful.

Primary peritoneal hydatid cysts require consideration in the differential diagnosis of cystic lesions adjacent to the liver, particularly in endemic regions. Preoperative imaging interpretation and tailored surgical planning are vital to achieve safe and effective management.

Categories: Radiology, General Surgery, Infectious Disease
Keywords: diagnostic challenge, echinococcus granulosus, hepatic hydatid cyst mimic, partial pericystectomy, primary peritoneal hydatid cyst

Introduction

Hydatid disease, also known as cystic echinococcosis, is a zoonotic parasitic infection caused by the larval form of *Echinococcus granulosus*. It remains endemic in several regions, including Morocco, where it continues to represent a significant public health concern [1]. The liver and lungs are the most frequently affected organs, whereas involvement of other anatomical sites is considerably less common [2]. Peritoneal involvement is rare, accounting for approximately 2-13% of abdominal hydatid disease cases [3]. Peritoneal hydatid disease is most often secondary to rupture or dissemination of hepatic or splenic cysts, whereas primary peritoneal localization remains exceedingly uncommon [4]. Clinical manifestations are frequently nonspecific, and preoperative diagnosis may be challenging when the cyst is closely apposed to the liver, potentially leading to misinterpretation as an exophytic hepatic lesion. Therefore, primary peritoneal hydatidosis should be considered when evaluating upper abdominal cystic masses in patients from endemic regions.

This report details a rare primary peritoneal hydatid cyst adjacent to the hepatic hilum, initially misidentified as hepatic on preoperative imaging. Intraoperative findings confirmed a purely peritoneal origin without parenchymal liver involvement. This presentation underscores the diagnostic pitfalls associated with atypical hydatid locations and outlines the management strategy required for vascular-adjacent lesions.

Case Presentation

A 32-year-old man with no significant past medical or surgical history presented with a one-year history of intermittent abdominal pain in the right upper quadrant and epigastrium. The pain was described as dull, moderate, and heavy, without radiation, periodicity, or constitutional symptoms.

The patient was hemodynamically stable on admission. On examination, there was mild tenderness in the right upper quadrant but no palpable abdominal mass or signs of peritoneal irritation.

Laboratory investigations, including complete blood count, C-reactive protein, liver and renal function tests,

and coagulation profile, were all within normal limits (Table 1).

Parameter	Value	Normal range
White blood cell count	9×10^9/L	4-11×10^9/L
Hemoglobin	14 g/dL	12-16 g/dL
C-reactive protein (CRP)	8 mg/L	<10 mg/L
Urea	3.1 mmol/L	2.5-7.8 mmol/L
Creatinine	8 mg/L	7-13 mg/L
Prothrombin time (PT)	90%	70-100%
Alanine transaminase (ALAT)	44 U/L	7-56 U/L
Aspartate aminotransferase (ASAT)	13.5 U/L	10-40 U/L
Alkaline phosphatase (ALP)	101 U/L	44-147 U/L
Gamma-glutamyl transferase (GGT)	23.9 U/L	9-48 U/L

TABLE 1: Initial laboratory test results

Contrast-enhanced thoracoabdominal computed tomography showed a 100×80 mm multiloculated cystic lesion with multiple daughter cysts, consistent with Gharbi type 3 hydatid cyst. The lesion was located in the hepatohilar region and extended subdiaphragmatically and intraperitoneally. This mass had a compressive effect on the left hepatic lobe, hepatic hilum, lesser curvature of the stomach, left portal vein, and inferior vena cava, but no radiological signs of vascular invasion were identified (Figure 1).

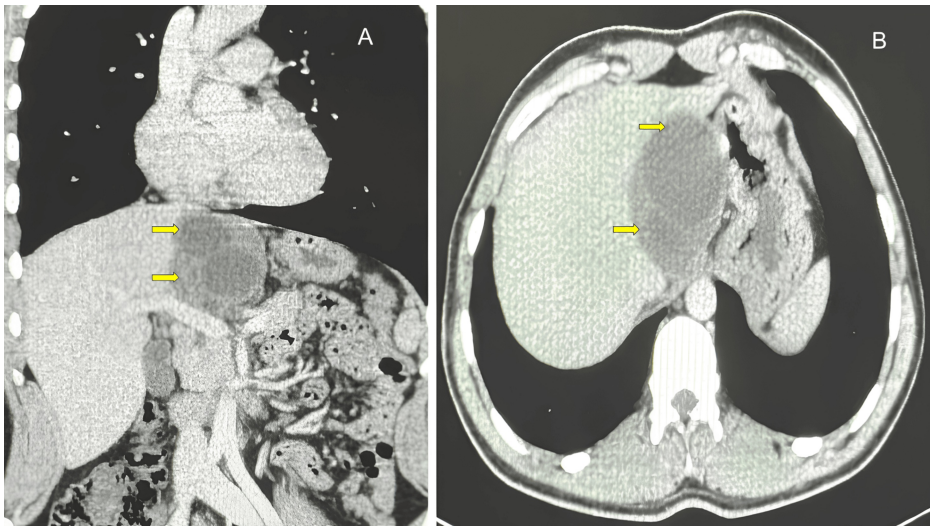


FIGURE 1: Abdominal computed tomography scan showing a well-defined multivesicular cystic mass in the hepatohilar and subhepatic region, closely related to the left hepatic lobe on coronal (A) and axial (B) views (yellow arrow)

The patient received preoperative albendazole (400 mg twice daily) for three weeks.

Under general anesthesia, surgery was approached via a right subcostal laparotomy. A large cystic mass beneath the liver that displaced the hepatic hilum and left hepatic lobe was discovered during surgical exploration (Figure 2A-2B). There were no other hydatid cysts inside the abdomen. A distinct cleavage plane between the mass and the liver parenchyma was found during careful dissection, indicating that the cyst originated from the peritoneum and was completely extrahepatic. The cyst wall continued to adhere firmly

to the inferior vena cava, hepatic hilum, and diaphragmatic surface. Complete excision carried significant vascular risks because of these intricate anatomical relationships. As a result, the protruding dome was removed to perform a partial pericystectomy (Figure *2C*). After aspirating the contents of the cyst, which produced many daughter cysts and germinal membranes, the remaining cavity was thoroughly irrigated with hydrogen peroxide and regular saline (Figure *2C*).

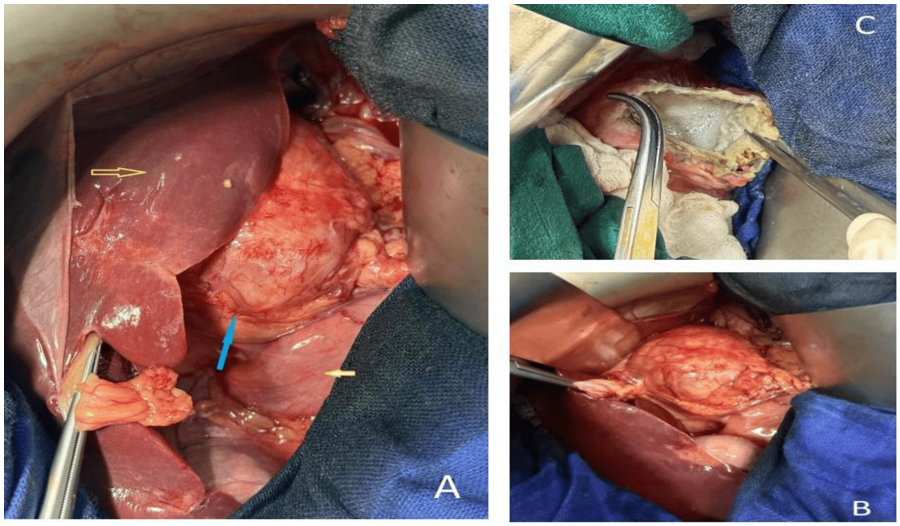


FIGURE 2: Intraoperative views showing a large cystic mass (blue arrow) located between the left hepatic lobe (yellow outlined arrow), hepatic hilum, and stomach (yellow filled arrow) (A, B), followed by resection of the protruding dome (partial pericystectomy) and irrigation of the residual cavity with hydrogen peroxide (C)

Before closing the abdominal wall, two closed-suction drains were placed in the residual cavity and the subhepatic space.

The postoperative recovery was uneventful. The drains were removed in sequence, and the patient was discharged on the fifth postoperative day. Postoperative albendazole (400 mg twice daily) was prescribed for three months. A primary peritoneal hydatid cyst was diagnosed following histopathological and parasitological examinations.

Discussion

Hydatid disease is a zoonotic parasitic infection resulting from the larval form of *Echinococcus granulosus* [1]. It continues to represent a significant health concern in endemic areas, particularly across the Mediterranean region, the Middle East, and parts of Southeast Asia, including Morocco [1,5]. Peritoneal involvement is uncommon and can present important diagnostic and therapeutic challenges [6]. In the present case, the absence of hepatic or pulmonary disease, together with the intraoperative identification of an isolated peritoneal cyst, supported the diagnosis of primary peritoneal hydatidosis. Peritoneal involvement has been reported in approximately 2-13% of abdominal hydatid disease cases [3], whereas primary peritoneal localization is considerably rarer, accounting for approximately 2% of cases [7].

The exact mechanism of primary peritoneal infection remains unclear, with differing hypotheses proposed in the literature, none of which are definitive [7,8]. Some studies suggest that dissemination into the peritoneal cavity may occur through systemic or lymphatic circulation, while others propose migration of hepatic cysts or rupture of the adventitia without compromising the cyst membrane [7].

Clinical presentation is often nonspecific and largely determined by the size and anatomical location of the cyst [9]. Symptoms generally result from progressive cyst enlargement and compression of adjacent structures rather than systemic manifestations. Depending on the site of involvement, patients may experience abdominal pain, distension, or pressure-related gastrointestinal or urinary symptoms. In our patient, localized abdominal pain was the main presenting symptom, consistent with the clinical features described in previous reports [9].

Abdominal imaging, particularly contrast-enhanced computed tomography, plays a central role in the diagnosis and anatomical characterization of hydatid cysts, allowing assessment of their location, internal

architecture, and relationships with adjacent structures [10]. However, atypical locations may create diagnostic difficulties and mimic lesions arising from neighboring organs. In our case, the close proximity of the cyst to the hepatic hilum and left hepatic lobe led to a preoperative diagnosis of hepatic hydatid cyst, whereas its primary peritoneal origin was confirmed only during surgical exploration.

The differential diagnosis of a primary peritoneal hydatid cyst includes mesenteric cysts, enteric duplication cysts, cystic lymphangioma, and other benign or cystic neoplastic lesions [7]. However, in our case, the unusual hepatohilar and subhepatic location closely mimicked an exophytic hepatic hydatid cyst on preoperative imaging. The absence of hepatic parenchymal involvement and the identification of a clear cleavage plane during surgical exploration confirmed the primary peritoneal origin. This diagnostic challenge highlights the importance of considering primary peritoneal hydatidosis when evaluating cystic lesions adjacent to the liver, particularly in endemic areas.

Surgical management remains the mainstay of treatment for primary peritoneal hydatid cysts. Complete cyst excision is preferred when safely feasible, with careful precautions to prevent spillage and secondary dissemination [3]. In our case, complete pericystectomy was considered unsafe because of the cyst's close adherence to the hepatic hilum and inferior vena cava. Therefore, a partial pericystectomy was performed to achieve safe evacuation of the hydatid contents while minimizing the risk of vascular injury. Thorough irrigation of the residual cavity and postoperative albendazole therapy were used to reduce the risk of recurrence [3].

Adjunctive albendazole therapy is commonly used after surgery for hydatid disease to reduce the risk of residual disease and recurrence [3,7]. In our case, albendazole was continued postoperatively for three months following partial pericystectomy. The postoperative course was uneventful, with no evidence of recurrence during follow-up. Given the risk of recurrence after conservative treatment, clinical and radiological follow-up remains important.

Conclusions

This case highlights the diagnostic challenge of primary peritoneal hydatid cysts located adjacent to the hepatic hilum, where their close anatomical relationship with the liver may lead to misclassification as hepatic lesions on preoperative imaging. Careful imaging assessment is essential to determine the organ of origin and guide surgical planning. In lesions closely adherent to major vascular structures, partial pericystectomy may provide a safer alternative to complete excision. Postoperative albendazole therapy and appropriate follow-up are important to minimize the risk of recurrence.

Additional Information

Author Contributions

All authors have reviewed the final version to be published and agreed to be accountable for all aspects of the work.

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Disclosures

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References

1. Chebli H, Laamrani El Idrissi A, Benazzouz M, et al.: Human cystic echinococcosis in Morocco: ultrasound screening in the Mid Atlas through an Italian-Moroccan partnership. PLoS Negl Trop Dis. 2017, 11:e0005384. 10.1371/journal.pntd.0005384
2. Mona C, Meryam M, Nizar K, et al.: Exploring rare locations of hydatid disease: a retrospective case series . BMC Surg. 2024, 24:160. 10.1186/s12893-024-02443-x
3. Kandel BP, Luitel P: Primary intraperitoneal hydatid cyst presenting with abdominal distension: a case report. Int J Surg Case Rep. 2025, 126:110789. 10.1016/j.ijscr.2024.110789
4. Basma BH, Souphia R, Wael F, Saoussen BM, Omar L, Bechir KM: Spontaneous intraperitoneal rupture of hepatic hydatid cyst in a cirrhotic patient: a diagnostic and therapeutic challenge - a case report. Int J Surg Case Rep. 2025, 133:111552. 10.1016/j.ijscr.2025.111552
5. Tepetes K, Christodoulidis G, Spryridakis M, Hatzitheofilou K: Large solitary retroperitoneal echinococcal cyst: a rare case report. World J Gastroenterol. 2007, 13:6101-3. 10.3748/wjg.v13.45.6101
6. Yuksel M, Demirpolat G, Sever A, Bakaris S, Bulbuloglu E, Elmas N: Hydatid disease involving some rare locations in the body: a pictorial essay. Korean J Radiol. 2007, 8:531-40. 10.3348/kjr.2007.8.6.531
7. Hegde N, Hiremath B: Primary peritoneal hydatidosis. BMJ Case Rep. 2013, 2013:bcr2013200435. 10.1136/bcr-2013-200435
8. Acharya AN, Gupta S: Peritoneal hydatidosis: a review of seven cases . Trop Gastroenterol. 2009, 30:32-4.
9. Sachar S, Goyal S, Goyal S, Sangwan S: Uncommon locations and presentations of hydatid cyst . Ann Med Health Sci Res. 2014, 4:447-52.
10. Das CJ, Venkatesh SS, Gupta S, Sharma R, Agarwal D, Kundra V: Abdominal hydatid disease: role of imaging in diagnosis, complications, and management. Abdom Radiol (NY). 2025, 50:5591-606. 10.1007/s00261-025-04957-1