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Case Report

Classical case of ruptured liver hydatid cyst with peritoneal and subpulmonic spread: a clinical review and imaging insight

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ABSTRACT:

Rupture of a hepatic hydatid cyst is a rare but serious complication that may result in life-threatening outcomes. In regions where hydatid disease remains prevalent, such as Echinococcus granulosus infection most frequently involves the liver. Although rupture is uncommon, when it occurs, it can cause dissemination of cyst contents into the peritoneal and subpulmonic spaces, triggering acute symptoms and severe allergic reactions. This article reports a typical case of hepatic hydatid cyst rupture with spread into both the peritoneal and subpulmonic compartments, emphasizing the clinical manifestations, characteristic imaging findings, and surgical treatment. Early recognition, urgent operative management, and structured postoperative care are critical to prevent recurrence and associated complications.

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INTRODUCTION

Rupture of a hepatic hydatid cyst is an uncommon but potentially life threatening complication that may lead to acute hypersensitivity reactions, including anaphylaxis, and widespread peritoneal dissemination[1]. Hydatid disease itself is a zoonotic parasitic infection most frequently caused by Echinococcus granulosus, with humans acquiring the parasite through ingestion of eggs in contaminated food or water, or via direct contact with definitive hosts such as dogs[1,2]. The liver is the primary organ involved in 50–77% of cases, with cysts often enlarging slowly and remaining asymptomatic until rupture or other complications occur[2,3].

CASE REPORT

Patient: 74-year-old female

History: Presented with acute right upper quadrant pain, low-grade fever, and abdominal distension. Previous history of hospitalisation for No history of trauma or surgery.

Examination: Tender hepatomegaly, signs of peritonitis.

Labs: Mild leukocytosis, eosinophilia

An initial USG and then a CT scan was done which revealed an 8.9 × 5.9 × 4.6 cm cystic lesion in hepatic segments V and VI with internal hyperdense floating membranes, suggestive of a hydatid cyst[Figure 1A,1B,1C]. There was a 10 mm breach in the liver capsule [Figure 2A,2B]with massive peritoneal spillage of cyst contents signifying its rupture. Additional cysts were seen in hepatic segments II and VIII, and peripherally enhancing cystic lesions were present in the perisplenic and subpulmonic areas[Figure 3A, 4A]. A suspected 5.7 mm rent in the left hemidiaphragm suggested thoracoabdominal spread. The classical "water lily" sign and floating membranes were evident in multiple views (axial, sagittal, coronal).

DISCUSSION

Rupture of a hepatic hydatid cyst, whether spontaneous or following trauma, carries significant morbidity and mortality risks[2,3]. Clinical presentation ranges from vague abdominal discomfort to severe hypersensitivity reactions, including anaphylaxis[2,3]. Intraperitoneal rupture, reported in approximately 1–16% of cases, can result in secondary peritoneal

hydatidosis[1,2]. CT imaging plays a pivotal role in confirming the diagnosis, detecting daughter cysts, and demonstrating discontinuity of the cyst wall[2]. In the emergency setting, surgical management [figure5A,5B] generally involves cyst unroofing and thorough peritoneal lavage with scolicidal solutions, such as hypertonic saline, to minimize the risk of parasite spread[3]. When possible, conservative surgical strategies are favoured in acute situations due to reduced operative risk[3]. Postoperative albendazole therapy for at least 12 months is recommended to lower recurrence rates, with follow-up by ultrasonography and serology every 3–6 months[2,3].

FIG 1A: USG showing a cystic lesion with multiple daughter cysts (orange arrow) within and echogenic material between the cysts

FIG 1B: USG showing a well defined cystic lesion showing detached irregular laminated membranes(marked by orange arrow) within it which appears to float within the contents of the cyst.

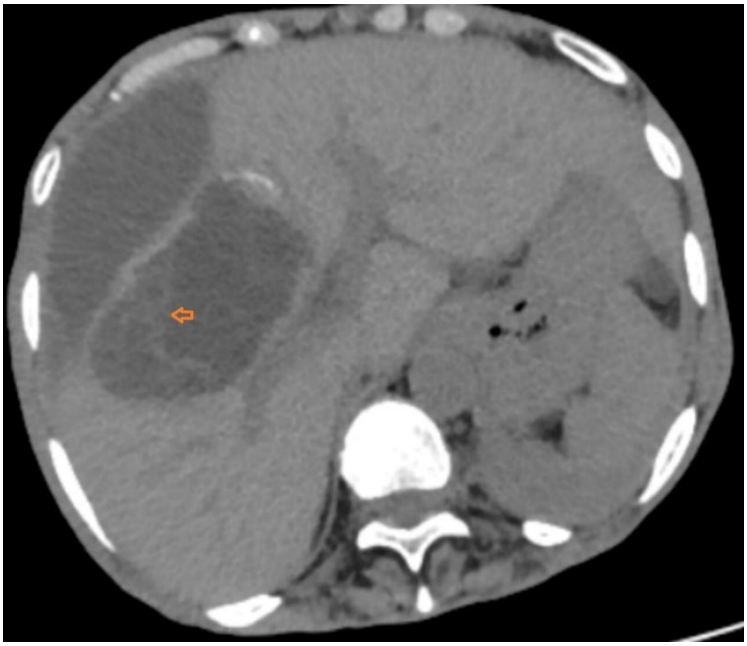

FIG 1C: Non contrast CT, Axial section: showing a well defined cystic lesion with thin walls and internal laminated septations(orange arrow mark).

FIG2A: USG showing a rent in the wall of the cystic lesion(marked by orange arrow) through which it is seen communicating with the peritoneal cavity.

FIG 2B: Non contrast CT , Sagittal section : showing a well defined cystic lesion with thin walls and internal laminated septations. There is a small defect in its wall communicating with massive peritoneal ascites s/o rupture into peritoneal cavity associated with peritoneal/omental thickening & smudging denoting peritonitis.

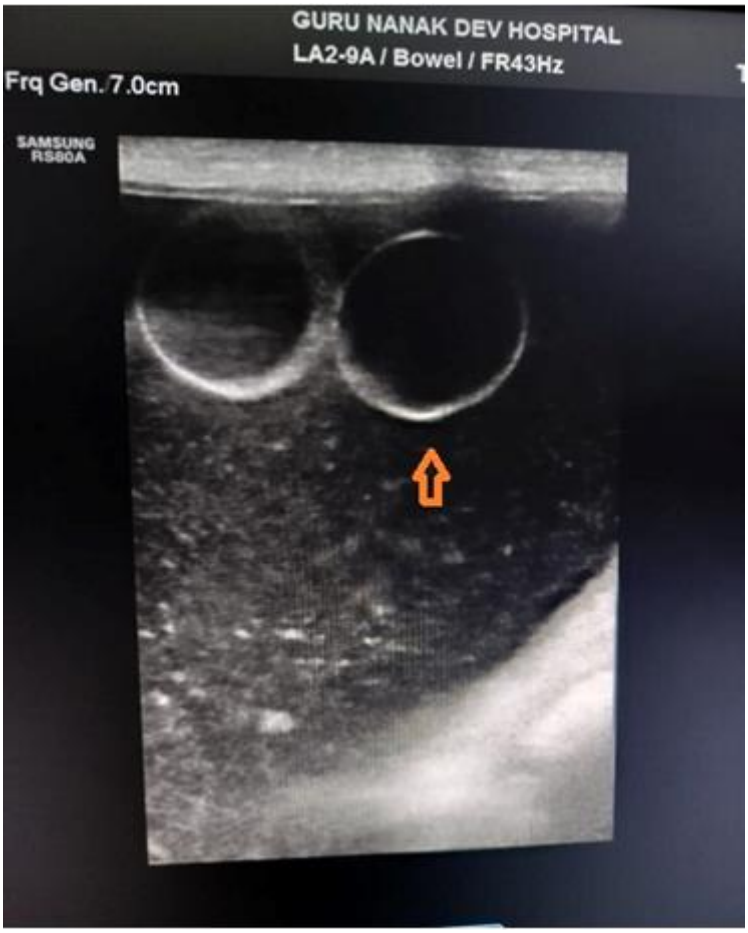

FIG 3A: USG shows well defined daughter cysts (marked by arrow) within the peritoneal cavity with dense coarse internal echoes floating in the peritoneal fluid.

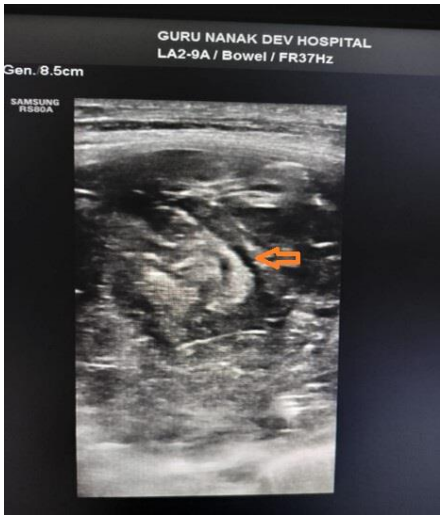

FIG 4A: USG showing irregular laminated membranes (marked by arrow)within the pleural cavity in the thoracic cavity.

FIG 5A: Intra operative image of ruptured hydatid cysts operated out through abdominal incision.

FIG 5B: Intra operative image of ruptured hydatid cyst membrane operated out in the OT.

CONCLUSION

Rupture of hepatic hydatid cysts into the peritoneal and subpulmonic spaces is a rare but critical emergency, requiring prompt diagnosis and surgical management. This case underscores the importance of early detection, imaging, and multidisciplinary coordination to improve outcomes and prevent recurrence in endemic settings.

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