

Hepatic Hydatid Cyst in a 75-Year-Old Female: A Case Report

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Abstract: *Hydatid disease, or cystic echinococcosis, is a zoonotic parasitic infection caused by the larval stage of Echinococcus granulosus. The liver is the most commonly affected organ. Hepatic hydatid cysts may remain asymptomatic for prolonged periods and gradually increase in size, eventually causing abdominal pain, pressure symptoms, or complications such as infection, rupture, or biliary communication. We report the case of a 75-year-old female who presented with right upper quadrant abdominal pain and vomiting for six months. Ultrasonography revealed a hepatic hydatid cyst, classified as CE3b according to the WHO-IWGE classification. The patient was treated with preoperative albendazole followed by laparotomy, cholecystectomy, deroofing of the hydatid cyst, thorough irrigation with cetrimide, and omentopexy. No biliary communication was identified. The postoperative period was uneventful, and the patient was discharged on the sixth postoperative day with postoperative albendazole therapy. Early diagnosis and appropriate surgical management are essential to prevent complications and recurrence.*

Keywords: Hydatid cyst; cystic echinococcosis; Echinococcus granulosus; liver; CE3b; deroofing; albendazole; omentopexy

1. Introduction

Hydatid disease is a parasitic zoonotic infection caused predominantly by the larval stage of *Echinococcus granulosus*. It is endemic in several regions of the world, including parts of India. The liver is the most frequently involved organ because it acts as the first major filter for larvae entering the portal circulation. Hepatic hydatid cysts may remain asymptomatic for years and are often detected incidentally or after the development of abdominal pain, pressure symptoms, or complications. Diagnosis is primarily based on characteristic imaging findings, particularly ultrasonography, which can demonstrate daughter cysts, detached membranes, hydatid sand, and calcification. Management depends on the cyst stage, size, location, symptoms, and presence of complications. We present a case of a large hepatic hydatid cyst in a 75-year-old female successfully managed by surgical deroofing and omentopexy.

2. Case Report

A 75-year-old female presented to the outpatient department of PDU Civil Hospital, Rajkot, with complaints of right upper quadrant abdominal pain for six months. The onset was insidious, and the pain was gradually progressive. She also reported non-bilious, non-projectile vomiting for six months. There was no history suggestive of other significant systemic complications.

Ultrasonography of the abdomen revealed a cystic lesion in the liver suggestive of a hydatid cyst, classified as **CE3b**, according to the WHO-IWGE classification. The lesion measured approximately 5 cm on ultrasonography.

Routine laboratory investigations were performed. Total leukocyte count was 8400/ μ L, hemoglobin was 12.9 g/dL, INR was 1.03, total bilirubin was 0.47 mg/dL, direct bilirubin was 0.20 mg/dL, and serum ALT was 13 U/L. The patient was

started on **albendazole 400 mg twice daily preoperatively** to reduce the risk of recurrence and secondary dissemination.

Laparotomy was performed. Intraoperatively, a spherical, white-colored, partially calcified cyst measuring approximately **8 × 6 × 5 cm** was identified on the medial aspect of the right lobe of the liver, just below the falciform ligament. The cyst was adherent to the gallbladder and transverse colon.

Cetrimide-soaked gauze pieces were placed around the cyst to minimize the risk of spillage and secondary implantation. Needle aspiration was performed, yielding gelatinous, semi-transparent, amber-colored cystic material, confirming the nature of the lesion.

The cystic duct and cystic artery were ligated, followed by cholecystectomy. Deroofing of the hydatid cyst was subsequently performed, and approximately 50 mL of gelatinous cystic material was aspirated. The cyst cavity was thoroughly irrigated with cetrimide solution and carefully inspected for any biliary communication. No biliary communication was identified. Omentopexy was then performed to obliterate the residual cavity and promote healing.

Following completion of the procedure, the peritoneal cavity was thoroughly irrigated twice with warm saline.

The postoperative period was uneventful. No bile leakage was observed during the postoperative follow-up. Albendazole 400 mg twice daily was restarted on the first postoperative day. The patient recovered well and was discharged on the sixth postoperative day. On follow-up, she remained asymptomatic and had no significant postoperative complaints.

3. Discussion

Hydatid disease (cystic echinococcosis) is caused by the larval stage of *Echinococcus granulosus*. In India, it is endemic particularly in sheep- and cattle-raising regions, with important foci in Andhra Pradesh/Telangana, Tamil Nadu, Karnataka, Jammu & Kashmir, Rajasthan and parts of Gujarat. The liver ($\approx 60\text{--}70\%$) is the commonest site, followed by the lungs. The cyst develops from an oncosphere and consists of an outer pericyst (host fibrous reaction), middle ectocyst/laminated membrane, and inner endocyst/germinal layer, which produces hydatid sand, brood capsules and daughter cysts.

The **WHO-IWGE classification** is based mainly on ultrasonographic appearance and reflects the biological activity of hepatic cystic echinococcosis

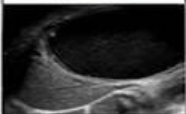
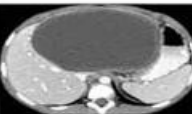
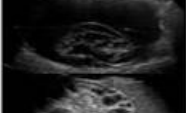
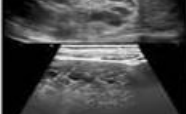
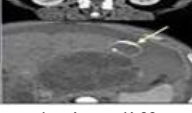
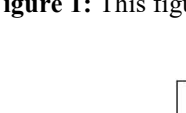
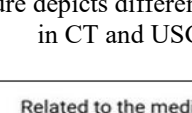
Ultrasound imaging WHO-IWGE	CT imaging	Classification	Stage
		CE1 Unilocular anechoic cyst	Active
		CE2 Multiple septations	Active
		CE3a Detached membrane	Transitional
		CE3b Daughter cysts in solid matrix	Transitional
		CE4 Hypoechoic and hyperechoic contents in cyst	Inactive
		CE5 Calcified cystic wall	Inactive

Figure 1: This figure depicts different stages of hydatid cyst in CT and USG

Management of hepatic hydatid disease depends on the cyst stage, size, location, symptoms, and presence of complications. Available approaches include **medical therapy, percutaneous treatment, and surgery**.

Albendazole is commonly used as an adjunct to definitive treatment. Preoperative therapy is intended to reduce cyst viability and the risk of secondary dissemination, while postoperative therapy helps reduce the risk of recurrence.

Surgery remains an important treatment modality for large, symptomatic, complicated, infected, or otherwise surgically appropriate hepatic hydatid cysts. The principal objectives of surgery are removal of viable parasitic material, prevention of spillage and anaphylaxis, identification and closure of biliary communications, and appropriate management of the residual cavity.

Surgical procedures can broadly be divided into **conservative and radical procedures**. Conservative procedures include cyst evacuation, deroofing, partial pericystectomy with omentoplasty, and capitonnage. Radical procedures include total pericystectomy and hepatic resection. Conservative procedures are technically simpler and may be preferred when the cyst is closely related to major vessels or bile ducts. Radical procedures may provide more complete removal of the cyst but can be associated with greater operative morbidity.

Laparoscopic surgery may be considered in carefully selected patients with accessible cysts. Regardless of the surgical approach, prevention of spillage is critical because spillage may result in secondary peritoneal echinococcosis and allergic reactions.

In the present case, **deroofing with evacuation of cystic contents, cetrimide irrigation, assessment for biliary communication, and omentopexy** was performed successfully. The patient had an uneventful postoperative recovery and was discharged on the sixth postoperative day.

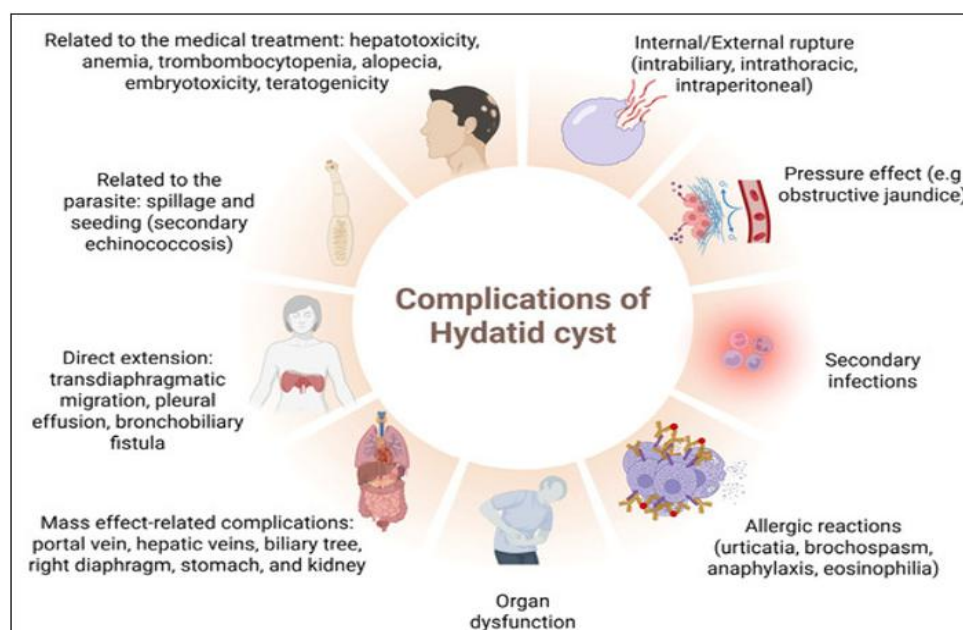


Figure 2: This figure depicts complications of hydatid cyst

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4. Conclusion

Hepatic hydatid cyst should be considered in patients presenting with abdominal pain, especially in endemic regions. In this 75-year-old female, a right-lobe hepatic hydatid cyst was successfully managed by deroofing, cetrimide irrigation, and omentopexy with perioperative albendazole therapy. The patient had an uneventful recovery, highlighting that appropriate surgical management can provide effective treatment with minimal postoperative complications.

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