ORIGINAL RESEARCH PAPER
Volume - 14 | Issue - 12 | December - 2025 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

# MULTIDISCIPLINARY MANAGEMENT OF RECURRENT TERATOMA OF THE HEPATOGASTRIC LIGAMENT WITH SECONDARY BILIARY OBSTRUCTION IN A CIRRHOTIC PATIENT: A COMPLEX SURGICAL AND INTERVENTIONAL CHALLENGE

General Surgery

**Dr Saif Khan** — Junior resident, Department of General Surgery, AIIMS, Bhopal-462020. ORCID- 0009-0001-1449-3999

**Dr Shyam Lal** — Professor, Department of General Surgery, AIIMS, Bhopal- 462020. ORCID- 0000-0002-6966-8864

**Dr Swagata Brahmachari** — Additional Professor, Department of General Surgery, AIIMS, Bhopal-462020. ORCID-0000-0002-2688-1286

**Dr Vikas Lal** — Assistant Professor, Department of General Surgery, AIIMS, Bhopal-462020. ORCID-0009-0005-1131-5723

## ABSTRACT

**Background:** Teratomas of the hepatogastric ligament are exceptionally rare, and management is challenging due to proximity to the portal triad, especially in cirrhotic patients. **Case Presentation:** A 48-year-old man with prior teratoma excision of the hepatogastric ligament presented with jaundice, melena, and portal hypertension. Imaging showed a recurrent hepatogastric ligament teratoma causing biliary obstruction. He underwent cyst deroofing with subtotal cholecystectomy, followed by staged hemostatic packing and endoscopic retrograde cholangiopancreatography (ERCP) stenting for bile leak. Intensive multidisciplinary care was required due to advanced cirrhosis and coagulopathy, and the patient was eventually stabilised and discharged. **Discussion:** Hepatogastric ligament teratomas remain an exceptional entity, with fewer than a handful of adult cases reported. While complete excision is typically curative in benign lesions, recurrence and coexistent cirrhosis markedly increase perioperative morbidity. In such high-risk settings, damage-control strategies, temporising biliary drainage, and intensive multidisciplinary support are crucial for survival.

## KEYWORDS

Teratoma; Hepatogastric ligament; Cirrhosis; Damage-control surgery; Biliary obstruction

## INTRODUCTION

Teratomas are neoplasms derived from germ cells that contain tissues from two or more of the three embryonic germ layers seen in either embryonic, fetal or adult stages of development, foreign to the part in which they arise. It can progress in both benign and malignant forms [1]. They should be distinguished from non-neoplastic malformations of all kinds. Roughly 20 % of teratomas are gonadal (ovary or testis), while about 80 % are extragonadal (e.g., sacrococcygeal, mediastinal, intracranial, retroperitoneal) [2]. Teratomas are germ cell tumours that rarely recur in adulthood. Recurrence in the hepatogastric ligament is exceedingly uncommon [3] and poses a distinct surgical challenge due to proximity to the portal triad. Here, we describe the management of a patient with recurrent hepatoduodenal ligament teratoma, biliary obstruction, and advanced cirrhosis, highlighting the challenges of staged surgical intervention and multidisciplinary critical care.

### Case Presentation

A 48-year-old man with a prior history of teratoma excision presented with progressive jaundice, abdominal distension and melena. Physical examination revealed a hard palpable mass over the right hypochondriac region. Laboratory data, including the serum tumour markers, carcinoembryonic antigen (CEA), carbohydrate antigen CA-19-9, CA-15-3, and CA-125, were within the normal range, conjugated hyperbilirubinemia and impaired synthetic liver function. Upper gastrointestinal endoscopy demonstrated low-risk, non-bleeding oesophageal varices. Doppler ultrasonography confirmed portal hypertension. Cross-sectional imaging demonstrated a recurrent cystic mass within the hepatogastric ligament, causing intrahepatic biliary dilatation, in association with gallstones (Figure 1).

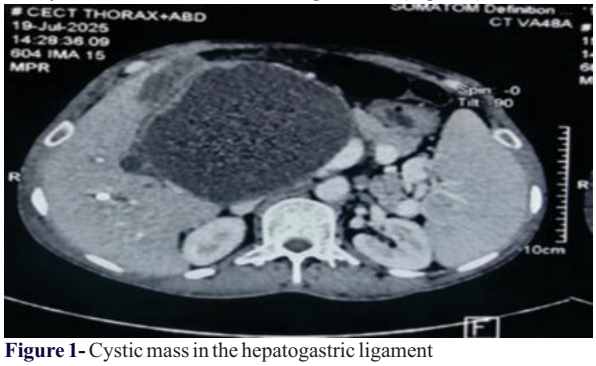


**Figure 1-** Cystic mass in the hepatogastric ligament

Initial biliary decompression was achieved with percutaneous transhepatic biliary drainage (PTBD), which yielded high-volume bile output and symptomatic improvement, but subsequent imaging confirmed persistent biliary obstruction due to the cystic mass. After multidisciplinary discussion involving hepatobiliary surgeons, gastroenterologists, interventional radiologists, and critical care specialists, operative intervention was undertaken. Intraoperatively, the mass was densely adherent to the portal triad (Figure 2A). A deroofing of the cyst and subtotal reconstituting cholecystectomy were performed. Diffuse oozing from the friable hepatic surface was noted, and damage control surgery was performed by packing of the liver and placement of a subhepatic drain (Figure 2B). Massive transfusion protocol was initiated due to significant intraoperative bleeding. Patient shifted to the intensive care unit on mechanical ventilation and on high ionotropic support. Re-exploration was done after 24 hours with Gelfoam application over the undersurface of the liver, and hemostasis was achieved (Figure 2C).

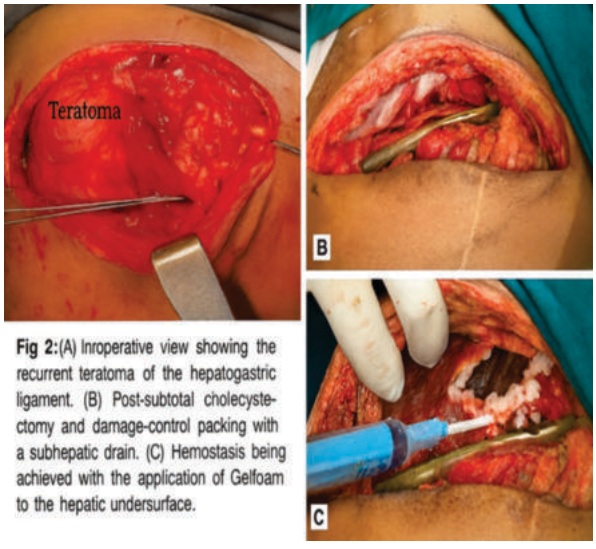


Fig 2:(A) Inroperative view showing the recurrent teratoma of the hepatogastric ligament. (B) Post-subtotal cholecystectomy and damage-control packing with a subhepatic drain. (C) Hemostasis being achieved with the application of Gelfoam to the hepatic undersurface.

**Figure 2-** A: Intraoperative view showing dense adhesions around the portal triad, B: Damage-control packing after cyst deroofing and subtotal cholecystectomy and drain placement, C: Re-exploration with Gelfoam application achieving hemostasis.

The patient was transferred to the intensive care unit, and ionotropic support was tapered. Further patient developed a bile leak due to stump blowout (Figure 3A). Endoscopic retrograde cholangiopancreatography (ERCP) for biliary stenting was done and achieved decompression (Figure 3B).

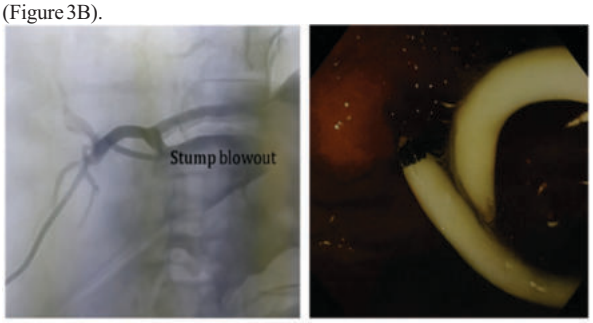


**Figure 3-** A: Bile leak noted post-operatively due to stump blowout, B: ERCP-guided biliary stent placement

Followed by drain removal and the patient was eventually discharged in improved condition. Written informed consent for participation and publication was obtained from the patient.

## DISCUSSION

Teratomas of the hepatoduodenal ligament are exceedingly uncommon. Most reported cases have been benign mature teratomas, often presenting as cystic lesions [3]. However, when recurrence occurs, the anatomical proximity of these lesions to the portal triad poses formidable challenges. Compression of the bile ducts and portal vein can result in obstructive jaundice, cholangitis, and portal hypertension [4]. Akimov (1989) reported a hepatoduodenal ligament teratoma complicated by hypertensive portal syndrome [5]. Souftas et al. (2008) described a dermoid cyst (mature teratoma) in a young woman, managed successfully with complete excision and uneventful recovery [3]. Sasaki et al. (2005) described a mature cystic teratoma in this location, emphasising diagnostic imaging features [6].

Compared with these earlier cases, our patient demonstrated a more aggressive clinical course due to recurrence, superimposed advanced cirrhosis, and portal hypertension, with significantly increased operative morbidity. Coagulopathy, friable hepatic parenchyma, and impaired regenerative capacity are recognised contributors to poor outcomes in cirrhotic patients undergoing hepatobiliary surgery. Biliary decompression by PTBD is a recognised temporising strategy when ERCP is not feasible.

Literature reports high perioperative risk in advanced cirrhosis, with outcomes determined primarily by hepatic reserve rather than completeness of tumour resection. Surgery carries the risk of injury to vital structures in the porta hepatis [7].

Given the hostile operative field, a damage-control approach was adopted. Subtotal reconstituting cholecystectomy with cyst deroofing, combined with staged hemostatic packing, exemplifies a pragmatic compromise between oncologic clearance and intraoperative safety in high-risk patients. Aggressive critical care support with a multidisciplinary approach contributes significantly to tackling critical hepatobiliary disorders. Prognostic counselling and early engagement of family members were critical in setting expectations and guiding management decisions.

This case highlights the rarity of recurrent teratomas in the hepatogastric ligament, the unique technical challenges posed by their proximity to the portal triad, and the importance of a multidisciplinary approach for achieving a successful patient outcome.

## CONCLUSION

Recurrent teratoma of the hepatogastric ligament is exceptionally rare. Its intimate relation to the portal triad, compounded by the risks of advanced cirrhosis and portal hypertension, demands a cautious operative strategy. Damage-control techniques, staged hemostasis, and robust multidisciplinary support are essential. While aggressive intervention may provide temporary stabilisation, long-term outcomes remain limited by hepatic reserve.

## REFERENCES

1. Peterson CM, Buckley C, Holley S, Menias CO. Teratomas: A Multimodality Review. *Curr Probl Diagn Radiol*. 2012;41(6):210-219. doi:10.1067/j.cpradiol.2012.02.001
2. Salzillo C, Imparato A, Fortarezza F, et al. Gonadal Teratomas: A State-of-the-Art Review in Pathology. *Cancers*. 2024;16(13):2412. doi:10.3390/cancers16132412
3. Souftas V, Polychronidis A, Giatromanolaki A, Perente S, Simopoulos C. Dermoid cyst in the Hepatoduodenal ligament: Report of a case. *Surg Today*. 2008;38(10):959-961. doi:10.1007/s00595-007-3744-9
4. Wang H, Dong J. Teratoma in the hepatoduodenal ligament followed by portal hypertension syndrome. *J Gastroenterol Hepatol*. 2004;19(4):477-479. doi:10.1111/j.1440-1746.2004.03366.x
5. [Hepatoduodenal ligament teratoma followed by hypertensive syndrome of the portal vein]. https://pubmed.ncbi.nlm.nih.gov/2719564/
6. Hepatobiliary and pancreatic: Mature cystic teratoma in the hepatoduodenal ligament. *J Gastroenterol Hepatol*. 2005;20(2):317-317. doi:10.1111/j.1440-1746.2005.03784.x
7. Ravikumar V, Rajamani G, Raju V, Sundar R, Ravikumar S, Maniam R. Teratoma arising from hepato duodenal ligament in the newborn with transection of portal vein, hepatic artery and common bile duct: A surgical challenge. *J Indian Assoc Pediatr Surg*. 2018;23(1):45. doi:10.4103/jiaps.JIAPS_131_17