

Case Report

EARLY-ONSET HEPATOLITHIASIS FOLLOWING CHOLECYSTECTOMY IN A NON-ENDEMIC REGION: A RARE HEPATOLOGICAL PRESENTATION

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ABSTRACT

Background: Hepatolithiasis is the presence of stones within Intrahepatic biliary ducts and is relatively uncommon in India compared to East Asian and Southeast Asian countries like Vietnam, Thailand, Indonesia, Taiwan, South Korea etc. It is associated with recurrent cholangitis and increased risk of cholangiocarcinoma. **Case:** We report a 59-year-old female presenting with fever, right upper quadrant abdominal pain and jaundice 2 months after cholecystectomy which is a rare presentation in a non-endemic region like India. Ultrasonography revealed multiple intrahepatic stones with ductal dilatation. Histopathological examination showed bile duct proliferation, chronic inflammation, and cholestasis with well differentiated cells. **Conclusion:** Early interventions are critical in preventing complications like recurrence and malignant transformation.

INTRODUCTION

Hepatolithiasis is defined as the presence of calculi/stones within intrahepatic bile ducts proximal to the confluence of right and left hepatic ducts. It is an endemic condition in East Asian and Southeast Asian countries but is relatively rare in India.^[1]

Hepatolithiasis is highly prevalent in East Asian and Southeast Asian countries like China, Taiwan, South Korea accounting for approximately 10-20 percentage of biliary tract diseases. Incidence of Hepatolithiasis is relatively rare in India and Western Countries with reported prevalence rates of <1 percentage. Hepatolithiasis is associated with cirrhosis, recurrent cholangitis, biliary duct strictures and an increased risk of cholangiocarcinoma.^[2] We report a clinicopathological case from a non-endemic region, highlighting its occurrence in a post-cholecystectomy patient.

The present case is unique and noteworthy due to its occurrence in a non-endemic geographical region presenting shortly after cholecystectomy along with an absence of Cirrhosis or Malignancy highlighting the need for clinical suspicion even in atypical settings.

Hepatolithiasis is characterized by recurrent stone formation within the intrahepatic biliary tree resulting from a combination of factors that include biliary infection, biliary stasis, changes in the

chemical composition of bile, and anatomical abnormalities. Most intrahepatic calculi belong to brown pigmented type and consist of calcium bilirubinate, which develop secondary to bacterial colonization and chronic inflammation. Unrelenting obstruction leads to recurrent episodes of cholangitis, progressive biliary fibrosis, segmental hepatic atrophy, and ultimately increases the risk of intrahepatic cholangiocarcinoma. Due to its chronic and relapsing course, hepatolithiasis often requires multidisciplinary management involving radiologists, gastroenterologists, hepatobiliary surgeons and pathologists.

Reports describing hepatolithiasis presenting within two months of cholecystectomy in a non-endemic Indian population remain extremely limited, making the present case clinically noteworthy.

Case Presentation

A 59-year-old female presented with recurrent right upper quadrant abdominal pain, fever, jaundice, loss of appetite, weight loss and pruritus. Pain is dull and non-radiating in character.

On examination, the patient was febrile (38.2°C) with a pulse rate of 96 beats/min, BP of 130/80 mm HG, and yellowish discolouration of eyes. Abdominal examination revealed tenderness in right upper quadrant. No Guarding and Rigidity were seen. No Hepatosplenomegaly was notable.

Laboratory investigations revealed elevated total bilirubin (4.2 mg/dL) with direct hyperbilirubinemia (2.8mg/dL), raised Transaminases (AST 78 U/L, ALT 92 U/L) and markedly increased Alkaline Phosphatase (420 U/L), with Leucocytosis (13,800 cells/mm³) with Neutrophilic predominance.

She had undergone Cholecystectomy 2 months prior to this presentation. Imaging with Ultrasonography revealed multiple echogenic foci with posterior acoustic shadowing within the dilated intrahepatic ducts (Figure 1). No mass lesion was identified on imaging.

Due to localisation with recurrent symptoms, a left hepatic lobectomy was done. The postoperative period was uneventful with symptomatic relief and normalisation of the laboratory findings. The patient did not have any complaints during the 3 month follow up period with no evidence of recurrence.

Since the disease was localized to the left intrahepatic biliary system without evidence of diffuse bilateral involvement, left hepatic lobectomy was considered the most appropriate definitive treatment to achieve complete stone clearance and remove the diseased biliary segment.

A left hepatic lobectomy specimen was received at the histopathology office. It was measuring around 11.5 x 10 x 4 cm (Figure 2). Cut section of the dilated intrahepatic bile ducts revealed multiple black pigment stones (Figure 3). Histopathological examination revealed dilated intrahepatic bile ducts with prominent bile duct proliferation and associated portal tract expansion (Figure 4). The presence of periductal fibrosis with fibro collagenous stroma and dense chronic inflammatory cell infiltration predominantly composed of lymphocytes was observed (Figure 5). Cholestasis was seen in hepatocytes and bile ducts. These findings were visible on low power magnification of 10x (Figure 4), while higher magnification of 40x confirmed the nature of inflammatory infiltrate and stromal changes (Figure 6). No evidence of dysplasia or malignancy was identified.

Follow Up

Long term surveillance is necessary even in the case where surgery seems to have been successful since recurrent stone formation may occur in the remaining parts of the biliary tract. Monitoring of patients is necessary through clinical evaluation and imaging in order to detect any recurrence or complications.

Differential Diagnosis

Based on the clinical presentation and imaging findings, differential diagnosis included recurrent choledocholithiasis, benign biliary stricture, ascending cholangitis from retained stones, intrahepatic biliary obstruction from malignancy, and recurrent pyogenic cholangitis. However, the lack of evidence of any mass lesion through imaging studies and the presence of calculi within the intrahepatic bile ducts lead to the diagnosis of hepatolithiasis.



Figure 1: Ultrasonography image showing multiple echogenic foci with posterior acoustic shadowing (arrows) within dilated intrahepatic ducts.



Figure 2: Gross specimen of left hepatic lobectomy showing intact cut surface, measuring 11.5 x 10 x 4 cm.



Figure 3: Cut section of the specimen revealing multiple black pigment stones within dilated and thickened intrahepatic bile ducts.

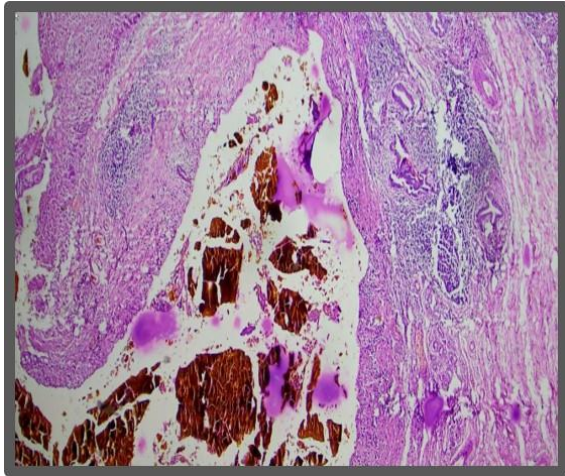


Figure 4: Photomicrograph (H&E, 10x) showing bile duct proliferation with adjacent pigment stone material and portal tract expansion.

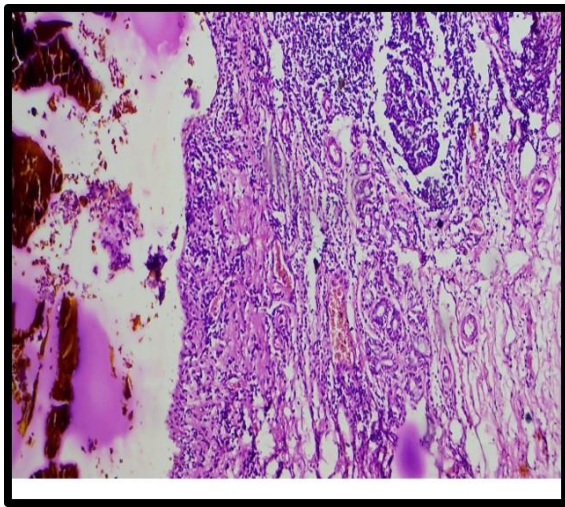


Figure 5: Photomicrograph (H&E) showing dense chronic inflammatory cell infiltrate, predominantly lymphocytic, with periductal fibrosis.

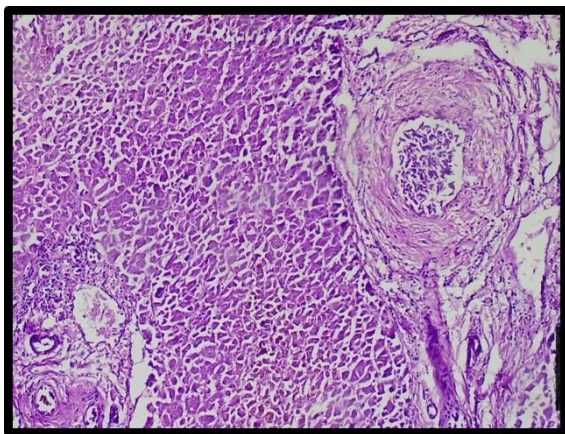


Figure 6: Photomicrograph (H&E, 40x) showing portal tract with periductal fibrosis and inflammatory infiltrate.

DISCUSSION

Hepatolithiasis is uncommon in India compared to endemic regions East and Southeast Asia. It typically

presents with a triad of right upper quadrant abdominal pain, fever and jaundice.^[3] All these classical features are also seen in the present case. Hepatolithiasis shortly after cholecystectomy is a clinically significant occurrence. Cholecystectomy raises the possibility of previously undetected intrahepatic stones and altered biliary dynamics. Cholecystectomy could lead to bile stasis and subsequent stone formation.

Pathogenesis of Hepatolithiasis is multifactorial involving biliary stasis, recurrent infections and changes in composition of bile. Chronic inflammation leads to bile duct injury, evident in this case as ductal proliferation, lymphocytic infiltration, and focal fibrosis.^[4] The Absence of cirrhosis or dysplasia indicates an early stage of disease, favouring prognosis if managed appropriately. Long-term sequelae of inadequately treated hepatolithiasis can include recurrent cholangitis, hepatic abscess formation, and an elevated risk of cholangiocarcinoma, underscoring the critical need for comprehensive therapeutic strategies.^[5]

Histopathology correlated well with chronic biliary obstruction. Proliferation of bile duct is indicative of long-standing injury and regeneration, while periductal fibrosis indicates inflammatory remodelling in biliary tract. The presence of lymphocytic inflammation indicates ongoing inflammation, while cholestasis within hepatocytes signifies impaired bile drainage. It is important to note that the lack of epithelial dysplasia or carcinoma indicates that surgery was performed prior to malignancy.

Imaging plays a crucial role from a diagnostic standpoint. Ultrasonography revealing multiple echogenic foci with posterior acoustic shadowing within dilated intrahepatic ducts is highly suggestive whereas Histopathological imaging remains crucial to assess the extent of biliary injury and to exclude a possibility of a malignancy.^[6] Chronic inflammation, epithelial injury, and repeated cycles of biliary obstruction are believed to contribute to dysplasia and eventual cholangiocarcinoma through persistent oxidative stress and chronic mucosal regeneration.

Although Ultrasonography is an ideal screening tool due to availability and capability to visualize intrahepatic bile ducts and acoustic shadowing, cross-sectional imaging with contrast-enhanced CT or MRCP allows better visualization of stones, bile duct anatomy and associated strictures. ERCP could be considered for certain selective cases for diagnostic purposes and for treatment interventions if there is any suspicion of extrahepatic bile duct pathology.

A key concern in hepatolithiasis is increased risk of complications like recurrent cholangitis and progression to carcinoma of the bile ducts.^[7] So, there is a need for early recognition and definitive management to reduce the possibility of these complications. Surgical intervention like hepatectomy not only reduces the stone burden but also eliminates diseased biliary segments, reducing

the risk of recurrence and malignancies in long term.^[8]

The treatment for hepatolithiasis should be customised based on the distribution of stones, biliary duct anatomy, liver function, and presence of complications. Some of the treatment modalities are endoscopic stone retrieval, percutaneous transhepatic cholangioscopic lithotomy, biliary drainage procedures and hepatic resection. Hepatectomy remains the ideal choice for treating localized hepatolithiasis since it ensures complete clearance of stones, eliminates strictured duct, and prevents recurrence of cholangitis and malignancy. Conservative treatment is associated with higher recurrence rates due to residual affected bile ducts.

In non-endemic regions like India, hepatolithiasis may not be routinely considered, especially in post cholecystectomy patients. This case highlights the need of suspecting hepatolithiasis in patients presenting with persistent or recurrent biliary symptoms after gall bladder removal.

While hepatolithiasis usually occurs in people with long-term biliary disease and frequent infections in certain areas, its appearance shortly after cholecystectomy suggests the possibility of undetected intrahepatic stones. It may also indicate changes in biliary flow that cause bile stasis, contributing to the formation of stones soon after surgery.

Limitations

The present report describes a single patient from a non-endemic region; therefore, the findings cannot be generalized to the wider population. Long-term follow-up beyond three months was not available to evaluate late recurrence or malignant transformation. Nevertheless, the rarity of early post-cholecystectomy hepatolithiasis and the clinicopathological correlation make this case educational for clinicians and pathologists.

CONCLUSION

Hepatolithiasis though rare in India, should be included among differential diagnosis of patients presenting with recurrent biliary symptoms particularly following cholecystectomy. A combination of imaging and histopathological evaluation is needed for accurate diagnosis. Early surgical management helps in prevention of complications such as recurrent infections, progressive fibrosis and potential risk of malignant transformation.

The present case highlights the fact that hepatolithiasis is not restricted only to the endemic areas. The occurrence of biliary complications after surgery for cholecystitis should be evaluated properly and should not be dismissed as routine postoperative

changes, particularly when accompanied by persistent cholestatic symptoms or abnormal liver function tests. Timely identification followed by proper imaging and histopathology helps to perform surgery before any permanent damage occurs.

Learning Points

- Consider hepatolithiasis in post cholecystectomy patients presenting with recurrent biliary symptoms.
- Imaging plays a crucial role in early suspicion and histopathological examination confirms the diagnosis.
- Early intervention helps in reducing the risk of recurrence and transformation to cholangiocarcinoma.
- Long-term postoperative follow-up is recommended because hepatolithiasis has a significant risk of recurrence even after definitive surgical management.

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REFERENCES

1. Motta RV, Saffioti F, Mavroeidis VK. Hepatolithiasis: Epidemiology, presentation, classification and management of a complex disease. *World J Gastroenterol*. 2024 Apr 7;30(13):1836-1850. doi: 10.3748/wjg.v30.i13.1836. PMID: 38659478; PMCID: PMC11036492.
2. Kim HJ, Kim JS, Joo MK, Lee BJ, Kim JH, Yeon JE, Park JJ, Byun KS, Bak YT. Hepatolithiasis and intrahepatic cholangiocarcinoma: A review. *World J Gastroenterol*. 2015 Dec 28;21(48):13418-31. doi: 10.3748/wjg.v21.i48.13418. PMID: 26730152; PMCID: PMC4690170.
3. Suresh I, Lokesh E, Suhas C, Nanaiah A. The nowhere stone: Unusually located intrahepatic calculi in a patient with low phospholipid-associated cholelithiasis syndrome. *J Dig Endosc*. 2019;10(3):171-4. doi:10.4103/jde.JDE_6_18.
4. Srinivasan G, Sekar ASI. Study of histopathological spectrum of gallbladder in cholecystectomy specimens. *Int J Res Med Sci [Internet]*. 2019 Jan. 25 [cited 2026 Apr. 3];7(2):593-9.
5. Mikolajčik P, Ferko A, Demeter M, Vorčák M, Laca E. The Difficult Path to Correct Diagnosis of Hepatolithiasis: A Case Report. *Acta Medica (Hradec Kralove)*. 2021;64(2):125-128. doi: 10.14712/18059694.2021.21. PMID: 34331433.
6. Saffioti F, Vieira Motta R, Quaglia A. Histological evaluation in biliary diseases. *Curr Opin Gastroenterol*. 2023 Mar 1;39(2):75-82. doi: 10.1097/MOG.0000000000000908. Epub 2023 Jan 4. PMID: 36821454.
7. Calomino N, Carbone L, Kelmendi E, Piccioni SA, Poto GE, Bagnacci G, Resca L, Guaracino A, Tripodi S, Barbato B, Brillanti S, Roviello F, Adani GL, Marrelli D. Western Experience of Hepatolithiasis: Clinical Insights from a Case Series in a Tertiary Center. *Medicina (Kaunas)*. 2025 May 7;61(5):860. doi: 10.3390/medicina61050860. PMID: 40428818; PMCID: PMC12113244.
8. Xia H, Meng X, Xin X, Yang T, Liu Y, Liang B, Wang J. Resection of extrahepatic bile ducts with partial hepatectomy for treating intra- and extrahepatic hepatolithiasis. *BMC Surg*. 2021 Dec 15;21(1):420. doi: 10.1186/s12893-021-01419-5. PMID: 34911513; PMCID: PMC8672556.