



Late Presentation of Chronic-Organised Biloma Masquerading as Gallbladder Fossa Mass Years After Cholecystectomy: a Diagnostic Enigma

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Introduction

Post-cholecystectomy bile leaks have varied presentations. It may be detected intra-operatively or post-operatively with bile draining from abdominal drains/wounds. Some patients have delayed presentation, weeks to months after cholecystectomy, with intra-abdominal bile collection known as “Biloma”. Bilomas presenting years after surgery are extremely rare, with only four cases reported in literature [1–4]. We present a case of chronic-organised biloma mimicking gallbladder fossa mass years after cholecystectomy. This appears to be the third such case in Indian literature and the fifth worldwide.

Case Presentation

A 40-year-old female presented with pain in the right upper abdomen since 3 months without any fever, jaundice or weight loss. She had undergone open cholecystectomy 20 years back for cholelithiasis. As per the patient, post-operative course was uneventful, although no records (including histopathology) were available. Examination revealed 5 × 5 cm lump in right hypochondrium suggestive of a sub-hepatic mass.

Blood investigations were normal. Ultrasound showed a non-shadowing echogenic mass in gallbladder fossa. Contrast-enhanced computed tomography (CECT) revealed

a solitary well-defined 5 × 5 cm heterogeneously enhancing extrahepatic mass in gallbladder fossa. It was abutting the liver bed without obvious invasion. Fat planes with adjacent structures were maintained. Possibility of a malignant mass was suggested. Since the mass was resectable, aspiration cytology was avoided. Exploratory laparotomy was performed for excision of mass with wedge resection of liver. The mass was present in gallbladder fossa at the site of previous cholecystectomy (Fig. 1a). Unlike malignant lumps, it was firm with flimsy adhesions. With gentle dissection, it was easily separated from liver bed with clear planes without any infiltration (Fig. 1b). Grossly, the mass had irregularly thickened wall with thick inspissated sludge inside (Fig. 1c, d). Frozen section from the wall revealed benign fibrous-vascular tissue. Hence, liver resection was avoided. Post-operative course was uneventful and patient was discharged on day 3 after removal of sub-hepatic drain. Histopathology revealed chronic organised biloma. The wall was formed by fibrous tissue with chronic inflammation. Contents were found to be cholesterol, bile salts and bile pigments. Post-operative magnetic resonance cholangiopancreatography (MRCP) revealed no evidence of bile leak.

Discussion

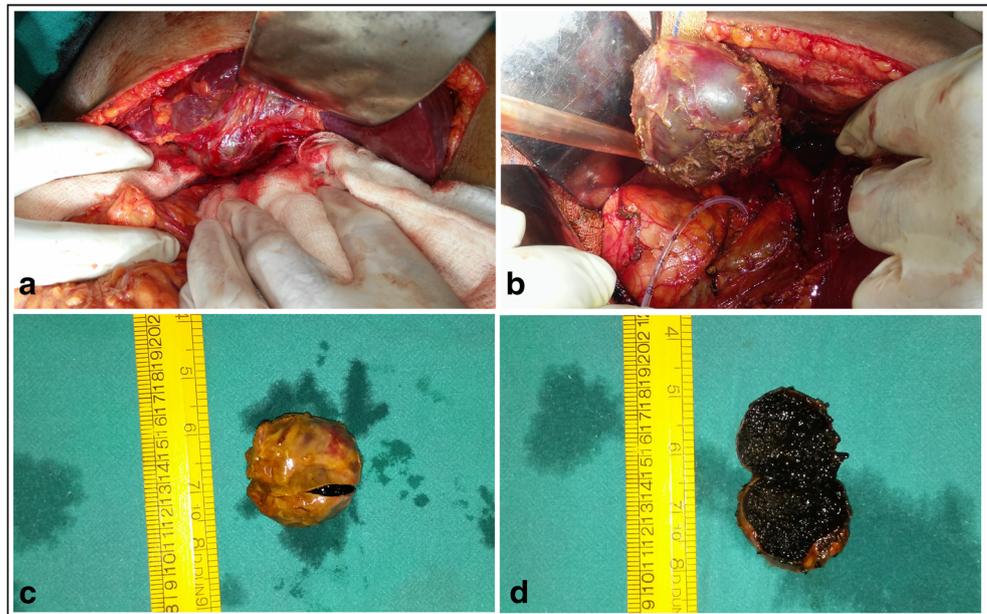
Post-cholecystectomy bile leak is a major complication with significant morbidity. The incidence of bile leak after laparoscopic cholecystectomy (0.15–0.7%) remains higher than open cholecystectomy (0.1–0.3%) [5]. Leak occurs from cystic duct stump (~74.24%), ducts of Luschka (6.06%), gallbladder bed (3.03%) or major ducts in the remaining [5].

The term “Biloma” appears to be a misnomer as it is not a tumour but simply walled-off collected bile with thin pseudocapsule secondary to low-grade inflammation

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Fig. 1 **a** Intraoperative findings reveal a firm mass present at the site of previous cholecystectomy in the gallbladder fossa, closely abutting the liver bed. **b** The mass after dissection, showing well-defined planes with the surrounding structures including the liver bed, duodenum, and bile duct. The common bile duct is normal. No evidence of bile leak is noted. Cystic duct stump was also sent for frozen section (cystic duct stump has been cannulated). **c** Gross specimen of biloma showing a well-defined pseudocapsule. **d** Thick inspissated bile (resembling tumefactive sludge) within the biloma



[6]. In our case, however, it actually resembled a mass. Stojanovic et al. reported giant bilomas 9 years after cholecystectomy treated by percutaneous and surgical drainage [1]. Similar to our case, biliary system was normal. Kannan et al. described a biloma along with bile leak, 5 years after cholecystectomy, managed by biloma excision and T-tube drainage [2]. Anand et al. reported another case occurring 1 year after surgery [3]. Unlike our case, all previous cases were diagnosed as cystic lesions.

Pathogenesis of chronic biloma remains obscure. Lack of initial symptoms could be due to slow collection of small amount of sterile bile from minor biliary injury, which might have closed spontaneously in absence of biliary obstruction [1, 6]. In our case, the long duration of biloma lead to resorption of fluid, resulting in thick inspissated sludge. Since the cut section of the surgical specimen resembled a cluster of biliary sludge encapsulated by a fibrous wall, a differential diagnosis of spilled sludge/stones during cholecystectomy was also considered [7]. However, as mentioned previously, the patient had undergone an open cholecystectomy. Spilled stones/lost stones are usually seen following dissection/specimen extraction after laparoscopic cholecystectomy [7]. Spillage of sludge/stones during open cholecystectomy is possible but its retrieval and clearance from the surgical site is much easier. It is unlikely that the operating surgeon would have left the spilled sludge in the gall bladder fossa during the open procedure. Moreover, spillage of sludge would have led to formation of multiple small granulomas (due to wide dissemination) [7] rather than a well-defined cluster in the gallbladder fossa. Considering the strategic location of the collection in the gallbladder fossa, the possibility of a chronic organised biloma

secondary to a minor leak from gallbladder bed/ducts of Luschka, seems more probable.

Ultrasound and CECT are primary modalities for diagnosis. Most cases are seen as cystic lesions. However, in our case, it appeared as echogenic mass on ultrasound and heterogeneously enhancing solid lesion on CECT, causing suspicion of malignancy. The radiological appearance was similar to tumefactive sludge which mimics a soft tissue mass within the gallbladder [8]. As biloma was not suspected clinically and radiologically, an MRCP was not performed. Retrospectively, we believe that MRI with MRCP might have been helpful.

Spontaneous resolution of small bilomas has been described [6]. Although the leak may stop spontaneously, collected bile is unlikely to resolve completely. Besides chances of infection, the undrained collection may be partly resorbed resulting in a solid-looking lesion on imaging. Thus, all bilomas must be drained, even if asymptomatic [9]. If bile leak persists, endoscopic sphincterotomy and stenting should be done. Few patients require definite repair of major injuries [6, 9].

Conclusion

Bilomas may remain asymptomatic for long, presenting years after cholecystectomy. Although mostly detected as cysts, long-standing biloma may appear as heterogeneous lesion on imaging, resembling gallbladder fossa mass and causing diagnostic dilemma. Chronic organised biloma must be considered as a rare differential diagnosis of right hypochondrium masses in post-cholecystectomy patients.

Compliance with Ethical Standards

Conflict of Interests The authors declare that they have no conflict of interest.

Informed Consent The authors confirm that an informed consent was obtained from the patient to be the subject of this case report. None of the images used disclose the identity of the subject in any form and patient anonymity has been maintained at all places in the text.

Ethical Statement An ethical approval was not necessary as this was a retrospective review of a clinical case and not experimental research data.

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