



## Hidden (Micro) Gallbladder: A Pitfall in Lap Cholecystectomy

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### Abstract:

Calculous biliary disease represents one of the most common causes of hepatobiliary illnesses requiring hospitalization in middle aged individuals. Presence of stones in the gallbladder (GB) may cause chronic fibrosis and loss of function of gallbladder, condition called as chronic cholecystitis. Laparoscopic cholecystectomy is the gold standard treatment for symptomatic gallstones presently. We present a case of micro-gallbladder in a middle aged female where the gallbladder was so much shrunken and embedded in the liver bed that laparoscopic cholecystectomy could not be done due to technical difficulty, so gall bladder was removed by open method. Patients behaved well in postoperative period.

**Key words:** Laparoscopic Cholecystectomy, Gallbladder Diseases, Gallstones, Cholelithiasis, Liver.

### Introduction

Chronic cholecystitis due to gallstones is one of the most common biliary pathology. In some cases of chronic cholecystitis, due to recurrent attacks of inflammation and fibrosis, gallbladder begins to contract and in rare cases present as a very small, shrunken gallbladder called micro-gallbladder. By definition, micro-gallbladder is less than 2-3 cm long and 0.5-1.5 cm wide [1]. Micro-gallbladder can also be seen in some medical conditions like cystic fibrosis, idiopathic neonatal hepatitis and alpha-1 antitrypsin deficiency etc [2]. Though laparoscopic cholecystectomy is the gold standard treatment for symptomatic gallbladder disease, in cases of micro-gallbladder, it may prove difficult or sometimes infeasible due to obliterated Calot's

triangle anatomy and difficulty in separating such gall bladders from the liver bed.

### Case Report

A 45 year female was admitted to our hospital with clinical features suggestive of gallstone disease for the past few months. Her routine laboratory investigations including liver function tests were normal. Abdominal ultrasonography revealed a small gallbladder with multiple stones in its lumen. She was planned for elective laparoscopic cholecystectomy. During laparoscopy, the GB was hidden in the liver bed and was hardly visible. Also there was extensive adhesions present between the

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**Received:** April 10, 2015 | **Accepted:** July 11, 2015 | **Published Online:** August 5, 2015

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**Conflict of interest:** None declared | **Source of funding:** Nil | **DOI:** <http://dx.doi.org/10.17659/01.2015.0085>

inferior surface of liver with colon and omentum. Laparoscopic dissection appeared infeasible due to dense adhesions obliterating Calot's triangle with concomitant increased risk of iatrogenic injury to biliary and portal structures. Due to this reason it was decided not to continue with laparoscopic dissection and conversion to open procedure was considered.

Operative findings after open exploration were adhesions present between the inferior surface of liver, colon and omentum and small contracted GB embedded in the liver bed with dilated cystic duct and prominent common bile duct (CBD) [Fig.1]. Since the anatomy of the Calot's triangle was not very clear, cholecystectomy was done by fundus first method. The GB specimen measured 2.4x1.4 cm and the wall was diffusely thick [Fig.2]. Histopathological examination of GB revealed chronic cholecystitis with cholelithiasis. On the third post-operative day, the patient was discharged from our hospital in stable condition. She is asymptomatic at 3 months follow up.

## Discussion

Gallstones are the most common biliary pathology. The etiology of gallstones is probably a combination of defect in lipid metabolism and supersaturation of bile contents, especially cholesterol. Chronic cholecystitis is a long standing GB inflammation almost always resulting from gallstones and prior episodes of acute cholecystitis. Damage results from infiltration of chronic inflammatory cells leading to a fibrotic and shrunken GB, which in rare cases may present as very small and shrunken GB, called as micro-gallbladder [1]. Micro-gallbladder is defined as a GB with less than 2-3 cm length and 0.5-1.5 cm width. Beside chronic cholecystitis, micro-gallbladder is also seen in some medical conditions like cystic fibrosis, idiopathic neonatal hepatitis and alpha-1 antitrypsin deficiency [2]. Diagnosis



**Fig.1:** Per-operative photograph showing small contracted gallbladder in liver bed with dilated cystic duct and prominent CBD.



**Fig.2:** Gall bladder specimen suggestive of micro-gallbladder.

of this condition is suspected by ultrasound having evidence of small contracted gallbladder, but is confirmed on table by per-operative findings.

Laparoscopic treatment is the gold standard treatment for symptomatic gallstone disease presently. Micro-gallbladder is a challenge for laparoscopic surgeons [3,4]. The initial fundus grasping is difficult. The loss of tissue plane is also a problem because of repeated attacks of inflammation. Thick walled gallbladder is a problem for assistant to hold and retract the gall bladder. At times, dense adhesions between inferior surface of liver with colon and omentum leads to almost non-visualization of gall bladder. Many of these cases have very small cystic duct which is difficult to ligate or clip. In presence of difficult anatomy and inability to pull gallbladder to dissect the Calot's triangle, there is definite risk of injury to biliary and portal structures [5]. In such cases hydro-dissection with suction cannula is advisable and if there is no progress in dissection of Calot's triangle, conversion to open procedure is recommended [6]. Conversion to open cholecystectomy in these cases should be considered neither a failure nor a complication of procedure, but an attempt to avoid complication.

## Conclusion

It is emphasized that micro-gallbladder is a definite entity and usually diagnosed per-operatively

on table. Micro-gallbladder is a challenge for laparoscopic surgeons and if difficulty is encountered during dissection, early conversion to open procedure is recommended.

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