### **CASE REPORT – OPEN ACCESS**

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# Gallbladder perforation into the greater omentum following sleeve gastrectomy: A case report study



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#### ABSTRACT

*INTRODUCTION:* Obesity is considered a major risk factor for gallstone formation and is important due to its increasing prevalence worldwide. Many studies have reported an increased incidence of gallstone formation following bariatric surgery. This report documents a rare case of a complicated cholecystitis following sleeve gastrectomy and describes our management of the case and the management options for gallbladder disease in bariatric patients.

PRESENTATION OF CASE: A 60-year-old male was diagnosed with asymptomatic cholelithiasis at the time of sleeve gastrectomy for obesity treatment. Two months after the procedure, he presented to the emergency department with symptoms of acute cholecystitis, which were initially managed conservatively. Six weeks later, he underwent a laparoscopic cholecystectomy. Intra-operative findings revealed a rare case of a complicated cholecystitis where the gallstone was half-eroded into the greater omentum.

*DISCUSSION:* A notable proportion of bariatric patients develop symptomatic complicated cholecystitis following laparoscopic sleeve gastrectomy, compared to the normal population. Furthermore, complications develop quickly and technical difficulties are associated with subsequent surgeries. Thus, early cholecystectomy is justified.

CONCLUSION: Patients with asymptomatic cholelithiasis, undergoing sleeve gastrectomy, may benefit from concomitant cholecystectomy. The question is yet controversial. This highlights the need for more clinical research in the field.

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### 1. Introduction

Recent studies have reported an increased incidence of cholelithiasis in obese populations compared to the general population [1]. An increased risk has been shown to be associated with excessive weight, following bariatric surgery [2].

Gallbladder perforations are mostly rare complications of acute cholecystitis. Laparoscopic cholecystectomies have also been identified as a cause, with a risk as high as 16.7% [3]. Patient awareness, diagnostic procedures such as ultrasound and CT scans and a high index of suspicion should be regarded as a cornerstone for the preoperative diagnosis of cholelithiasis and cholecystitis.

This is a report of a rare complicated case of cholecystitis, following sleeve gastrectomy. The report also discusses concomitant cholecystectomy in patients, with asymptomatic gallstones, under-

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going sleeve gastrectomy. Due to confidentiality being one of the core duties of medical practice, the patient's name in this study was not disclosed

The work has been reported in line with the SCARE criteria [4].

### 2. Case report

A 60-year-old male patient was referred to our Clinic following sleeve gastrectomy, which was performed 2 months earlier. At the time of presentation, he had lost  $20\,\mathrm{kg}$ , weighing  $135\,\mathrm{kg}$  (BMI of  $48.4\,\mathrm{kg/m^2}$ ). Prior to surgery, he was diagnosed using an ultrasound, with asymptomatic cholelithiasis, with two gallstones measuring  $22\,\mathrm{mm}$  and  $37\,\mathrm{mm}$  in diameter.

The patient had a history of myocardial infarction, hypercholesterolemia, hypertension and non-insulin dependent type 2 diabetes mellitus. Both hypercholesterolemia and diabetes mellitus type 2 resolved after sleeve gastrectomy. The patient was also prescribed antihypertensive drugs, Plavix and Aspirin. Apart from obesity and surgical scars, physical examinations revealed negative findings

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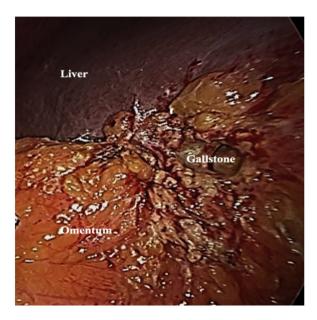


Fig. 1. Laparoscopic image of the half-eroded gallstone into the greater omentum.

and stable vital signs. Blood tests were normal and an abdominal ultrasound (US) confirmed cholecystolithiasis.

65 days postoperatively, the patient was admitted to the Emergency Department presenting with acute right upper quadrant (RUQ) pain radiating to the back and right shoulder. Vital signs were notable for a temperature of 39 °C. Examination findings included abdomen tenderness, guarding and rebound in the RUQ area. An abdominal ultrasound (US) was performed and showed two significant stones within the gallbladder, thickenededematous gallbladder wall and no free or pericholecystic fluid. Laboratory testing revealed an elevated white blood cell count of 18,000 cells/mcl (normal range: 4500–10000 cells/mcl), Gamma-Glutamyl Transpeptidase(GGT) of 80 U/L (normal range: 8–65 U/L) and C-reactive protein of 97 mg/dl. Liver function tests, lipase and amylase were within the normal range.

# (Normal ranges according to the U.S. National Library of Medicine)

The patient was counseled on the need for surgery, but he refused any surgical intervention and insisted on conservative treatment instead. He was administered intravenous antibiotics (Ceftriaxon and Metronidazole) and analgesia (Perfalgan) and was hospitalized for 3 days. At discharge oral antibiotics and analgesia were prescribed for 6 weeks. During the 6 week conservative treatment period, the patient claimed of mild to moderate intermittent RUQ pain accompanied by elevated temperatures. Laboratory testing revealed that his white blood cell count was reduced to 13,000 cells/mcl (normal range: 4500–10000 cells/mcl). However, C-reactive protein was still elevated during the period. After 6 weeks of conservative treatment, the patient was prepared for a laparoscopic cholecystectomy. Plavix and Aspirin were withdrawn 1 week prior to surgery.

### 2.1. Intra-operative findings

dense adhesions at the site of sleeve gastrectomy with the omentum covering the fundus of the gallbladder, forming a conglomerate. No free fluid was observed. During the dissection of the omentum from edges of the right lobe of the liver towards the gallbladder, one of the gallstones was *half eroded into the greater omentum(not due to dissection)* (Figs. 1, 2).

Due to technical difficulties, a retrograde dissection was performed. The dissection was completed successfully and the patient

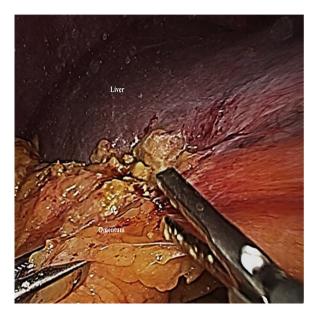


Fig. 2. Laparoscopic image of the greater omentum covering the gallbladder.



Fig. 3. Laparoscopic image of pus within the greater omentum.

was hospitalized for 2 days and was given intravenous antibiotics followed by 3 weeks of oral antibiotics at discharge.

### 2.2. Histology report

Signs of chronic calculous cholecystitis with extensive surface epithelial erosions and multi foci of cholesterol granulomas.

Culture of the specimen fluid showed *E. Coli*.

### 2.3. Diagnosis

Complicated gallbladder perforation into the greater omentum following sleeve gastrectomy.

\*There were no postoperative complications and the patient returned to routine preoperative activities after 14 days (Fig. 3).

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