

Laparoscopic Completion Cholecystectomy for Residual Gallbladder: A Case Report and Literature Review

Iqra Imtiaz, Muhammad Touseef Asghar

IMPORTANCE Gallbladder infection can present with variable severity and in acute settings may compel surgeon to perform a relatively less complex, subtotal cholecystectomy in certain circumstances, which may lead to a residual portion of the gallbladder and associated complications in some cases. The reported incidence of such cases of subtotal cholecystectomy ranges from 0.4 to 3%, out of which 10% develop symptoms and present in healthcare centers with complications such as remnant cholecystitis and reoccurrence of cholecystolithiasis, or even gall bladder carcinoma. Here, we report a case of the residual gallbladder which was subsequently catered through a laparoscopic approach successfully

KEYWORDS residual gallbladder, postcholecystectomy syndrome, laparoscopic cholecystectomy, completion cholecystectomy, Magnetic Resonance Cholangiopancreatography, minimally invasive surgery

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Case Report

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A commonly performed procedure across the globe that involves the removal of the gall bladder through an incision is called a cholecystectomy, which is the standard treatment for gall bladder stones. Inflammation resulting in adhesions that contribute to difficult dissection is commonly encountered in this surgery, which imposes a risk of bile duct injury.¹ A residual gall bladder may be left intentionally to prevent such an injury or unintentionally due to unskilled or erroneous identification of the biliary system anatomy, often in such settings of adhesions². The reported incidence of such cases of subtotal cholecystectomy ranges from 0.4 to 3%, out of which 10% develop symptoms and present in healthcare centers with complications such as remnant cholecystitis and reoccurrence of cholecystolithiasis, or even gall bladder carcinoma^{1,3,4}.

CASE REPORT

A 34-year-old female presented to us on 24th December 2021 in the outpatient department with a history of right upper quadrant pain, nausea, and vomiting for 2 days. The pain radiated to her back and was sudden in onset. There were 3-4 episodes of vomiting associated with the pain, the vomitus being projectile in nature, yellow in color, and containing no blood. She also had loose green stools without the presence of blood, occurring intermittently.

She had seasonal allergies for which she had been taking Monteleukast for 10-12 years and had a surgical history of open cholecystectomy 10 years ago. Her family, personal and medical history were non-significant.

She was vitally stable, with no significant abnormal findings on general physical examination. There was no evidence of free fluid in the abdomen. Normal bowel sounds were heard. Lymphadenopathy was not present. The chest examination was unremarkable, and jaundice was not present.

Her baseline investigations showed a normal CBC, sugar profile, LFTs, RFTs as well as negative hepatitis and COVID-19 markers. Her ultrasound reported a small residual gall bladder stump occupied with an echogenic calculus. There was no notable intra or extrahepatic biliary dilatation.

A diagnosis of calculus in residual gall bladder stump was made based on the history, physical examination, and investigations of the patient. After anesthesia clearance for surgery, completion laparoscopic cholecystectomy was carried out. Under aseptic measures, four incisions were made, two trocars were inserted laterally in the right subcostal region, one in the subxiphisternum region, and one supra-umbilically. The abdomen was insufflated with carbon dioxide and pneumoperitoneum was created. The telescopic camera was inserted and identification of the

Calot's triangle was done. The gall bladder stump was retracted over the liver using long instruments for adequate exposure to the hepatocystic triangle. Cystic artery and duct were identified, clipped, and dissected. The gallbladder stump was identified and after careful dissection, the stone was removed. The stump was dissected and removed via the epigastric port. The incisions were closed and an aseptic dressing was done. Stitches were removed after 7 days, and the patient had an uneventful recovery. The histopathology report stated that the specimen shows chronic cholecystitis without any pathological evidence of granuloma or malignancy.



Figure 1: A laparoscopic image of a large stone retrieved from the gallbladder stump



Figure 2: Residual gall bladder stump

CASE DISCUSSION

A residual gall bladder stump may be left during cholecystectomy because of a difficult gall bladder. It is relatively safe to do so. However, complications may arise in a fraction of post cholecystectomy cases, including postcholecystectomy syndrome and the development of a biliary fistula⁵. A residual gall bladder stump is more likely to lead to complications than a long cystic duct stump¹. There is an indication of subtotal cholecystectomy in 3 to 8% of the patients with gall bladder disease in case of unclear anatomy, intense inflammation and to avoid iatrogenic complications such as hemorrhage in the setting of portal hypertension². Laparoscopic cholecystectomy is the gold standard treatment of cholecystitis and it is recommended that a laparoscopic completion cholecystectomy be performed by a trained, expert and experienced team in case of complications of a gall bladder stump⁶. A residual gall bladder or cystic duct remnant can significantly increase morbidity. Stones in such cases should be removed surgically, to avoid further complications such as Mirizzi syndrome, carcinoma, gross dilation of the remnant, mucocele, and recurrent cholangitis. The chances of a residual gall bladder or cystic duct can be reduced by careful identification of the anatomy of the hepatobiliary system, milking of cystic duct before ligation or clipping, observation of the free flow of bile after removal of stone from the neck of the gall bladder or cystic duct, not leaving a cystic duct remnant of more than 0.5cm, transformation of cystic duct stump with absorbable sutures, routine intra-operative cholangiography in surgical candidates without extensive inflammation, as well as looking for a cystic duct with low insertion running parallel to the bile duct⁷.

To conclude, a subtotal cholecystectomy at times is the best approach in some surgeries and may lead to complications. A laparoscopic completion cholecystectomy by a surgeon with sufficient expertise is the way to go in the curative approach in such cases⁸.

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