

Completion Cholecystectomy for Residual Gallbladder: A Re-emerging Problem in the Era of Safe Cholecystectomy

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ABSTRACT

Incomplete gallbladder removal usually leads to residual gallbladder, which can act as a nidus for stone formation in later life. Stump cholecystitis is a condition in which, such a large gallbladder remnant left after subtotal cholecystectomy becomes inflamed. When this happens, a completion cholecystectomy is advised.

We present a rare case of residual gall bladder in a 44-year-old woman who underwent a subtotal cholecystectomy procedure 12 years ago.

Key Words: Shock; bowel; perforation; ischemia; pneumatosis

INTRODUCTION

The incidence of abdominal symptoms after cholecystectomy ranges from 10% to 40% and it may reach up to 50% according to some authors [1]. Common causes of post cholecystectomy syndrome are stenosis or dysfunction of the sphincter of Oddi, choledocholithiasis, and incomplete surgery to name a few. Both open and laparoscopic techniques may result in subtotal cholecystectomy, but a few more cases seem to occur during laparoscopic surgery. The common clinical presentation is with symptoms of abdominal pain, dyspepsia, and jaundice.

Despite the suggestive history, the diagnosis of residual gallbladder is often delayed due to a low index of suspicion. Therefore, clinicians should consider it as a diagnosis, especially when other pathology has been excluded after thorough investigation [2].

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CASE REPORT

A 44-year-old female patient presented to the surgery department with complaints of pain in right upper abdomen for one month, which was colicky in nature, radiating to the back with no aggravating or relieving factors. She had multiple episodes of vomiting which were non-bilious. There was no other significant history of jaundice, fever, or abdominal distension. Her bladder and bowel movements were normal.

In the past, she had undergone an open cholecystectomy 12 years back.

On abdominal examination, there was tenderness in the right hypochondrium. Her baseline blood investigations (haemogram, serum electrolytes, renal function tests and liver function tests) were all within normal range.

A preliminary USG was done to look for the pathology of her complaints, and it revealed a pear-shaped organ with multiple calculi in the gall bladder fossa with dilated common bile duct.

In order to clearly delineate the anatomy and formulate a management plan, MRCP was done which was suggestive of residual gallbladder and prominent cystic duct both showing calculi (Figure 1). The patient was planned for completion cholecystectomy via open approach. A

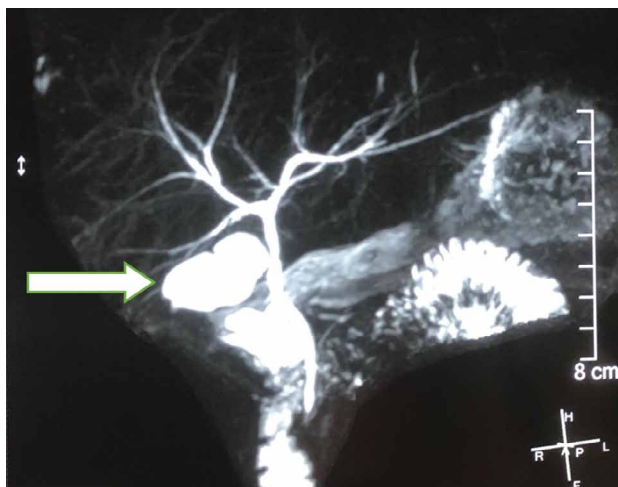


FIGURE 1. MRCP showing the residual gallbladder (white arrow).

right subcostal incision was made. Dense adhesions were encountered between the colon, liver and abdominal wall due to previous surgery. Adhesiolysis was done in order to visualise the structures in the upper right quadrant. There was extensive neovascularisation with fibrous tissue around the gallbladder. A reformed gallbladder of size 7x5 cm in diameter with multiple calculi was seen.

Dense adhesions were present in Calot's triangle, which were dissected step by step. The common bile duct was identified and the residual gallbladder was dissected in an antegrade fashion. The stump was transfixed, at its junction with the common bile duct junction using polyglactin suture (Figure 2).

The dissected gallbladder was sent for histopathological examination. Oral intake was initiated after return of

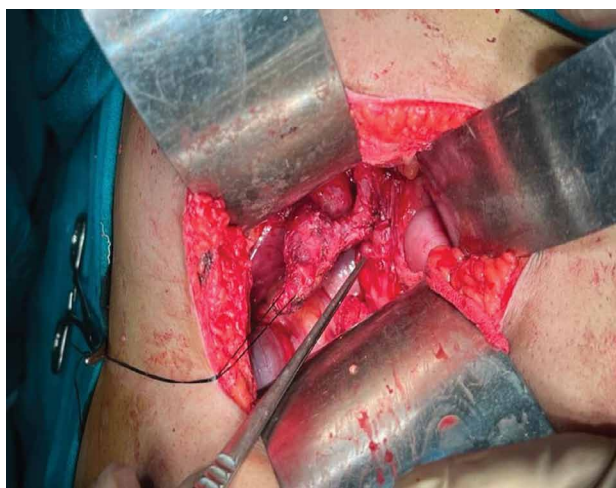


FIGURE 2. Intraoperative image showing the reformed gallbladder (black suture).

bowel sounds on postoperative day 2. Her recovery was uneventful and she was discharged after a short postoperative stay of four days. She was asked to follow up after a week. Her sutures were removed at the follow-up visit. The final biopsy of the specimen was reported as xanthogranulomatous cholecystitis. The patient returned for follow-up one month after surgery and was doing well, except for pain at the incision site which was managed with oral analgesics.

DISCUSSION

Residual gallbladder refers to the remnant part of the gallbladder, left behind after partial cholecystectomy done in certain situations [3]. With the advent of SAGES, Safe Cholecystectomy Program, and an era of laparoscopic surgery, subtotal cholecystectomy is now considered as an effective bail-out technique during hostile intra-operative conditions in the form of frozen Calot's anatomy. But this effective bail-out technique prones a patient to residual gallbladder which may manifest at any time later in life.

Incidence of incomplete gallbladder removal following conventional cholecystectomy appears very low. Incomplete resection of the gallbladder occurs in 13.3% of laparoscopic cholecystectomies. Reasons for incomplete resection include poor visualisation of gallbladder fossa during surgery, adhesions, concurrent inflammation, excessive bleeding, or confounding gallbladder morphology such as a congenital duplication or an hourglass configuration due to adenomyomatosis [4]. According to Kohgen et al, 3% of the patients who underwent open subtotal cholecystectomy developed remnant cholecystitis [5].

Clinical presentation of residual gallbladder can include biliary colic, obstructive jaundice, cholangitis, and biliary pancreatitis. With the advent of MRCP, it is now considered as the investigation of choice to see the anatomy of the hepatobiliary system and to formulate a treatment plan [6].

Treatment consists of completion cholecystectomy to prevent complications such as mucocele acute cholecystitis, gross dilation of the remnant, and Mirizzi syndrome. Initially, open completion cholecystectomy was considered the recommended procedure in view of the formation of scar tissue and adhesions after the initial attempt of cholecystectomy. But as more and more expertise is being gained in laparoscopic surgery, such reoperations can now be performed successfully with minimally invasive approaches. Chowbey et al. reported five patients who underwent successful laparoscopic re-intervention after previous surgery for gallstone disease under them [7]. Clemente et al. also described the feasibility of laparoscopic removal of gallbladder remnant and cystic duct stump [8]. Tantia et al. have reported seven cases of lapa-

roscopic re-intervention of gallbladder remnant, and they found that, despite adhesions in the gallbladder fossa, these patients managed well with laparoscopic surgery [9]. While searching the literature, we could not find any definitive indications for performing these operations laparoscopically. We personally feel that if the surgeon has adequate experience in the field of hepatobiliary surgery and possesses good laparoscopic skills, such reoperations can be performed laparoscopically with promising results. Moreover, patients will have the added advantage of faster recovery and less postoperative pain.

We preferred an open approach because the patient had previously undergone subtotal cholecystectomy via an open approach.

Certain points that should be kept in mind to decrease the rate of a subtotal cholecystectomy and hence, the incidence of residual gallbladder:

1. Operative intervention should be deferred for acute cholecystitis, especially after 48-72 hours of the onset of attack in view of distorted Calot's anatomy.
2. Back up of an experienced hepatobiliary surgeon should be available. What may seem to be difficult anatomy to some may be simple for an experienced faculty in this field, making complete cholecystectomy possible during the primary surgery.
3. If at all subtotal cholecystectomy is required, the correct surgical technique should be followed.

CONCLUSION

We emphasise that, if there is a history of recurrent biliary colic that is reminiscent of the pain for which the initial cholecystectomy was performed, it should raise suspicion of residual gallbladder. Completion cholecystectomy is a safe procedure provided that adequate preoperative planning has been done and expertise of an experienced surgeon in this field is available.

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