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ONE YEAR CLINICAL EXPERIENCE OF CBD STONES IN POST OPERATIVE CHOLECYSTECTOMY CASES WITH REMNANT GALL BLADDER: A CASE SERIES

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INTRODUCTION

Cholelithiasis with cholecystitis in a remnant gall bladder is a recognised condition in which a large gallbladder remnant becomes inflamed after subtotal cholecystectomy. Subtotal cholecystectomy however is not without risk of recurrence, and the need for further surgical or endoscopic intervention in management of complications. When this occurs, a completion cholecystectomy is indicated[1].

The "difficult gallbladder" is a case scenario in which a complete cholecystectomy incurs an increased surgical risk compared to a standard case[2]. Cholecystectomy can be difficult either due to obscuration of normal biliary anatomy (eg: by acute or chronic inflammation) or by operative exposure (eg: obesity or prior upper abdominal surgery) which eventually leads to complications like bile duct injury or CBD stones.

Subtotal cholecystectomy was described in 1985 as an alternative to total cholecystectomy in cases of difficult cholecystectomy. It can be classified into reconstituted and fenestrated subtotal cholecystectomy. In spite of being a viable alternative, up to 10.6% of biliary leakage is reported and 2.2% of patients present with cholecystitis of the gallbladder remnant[3].

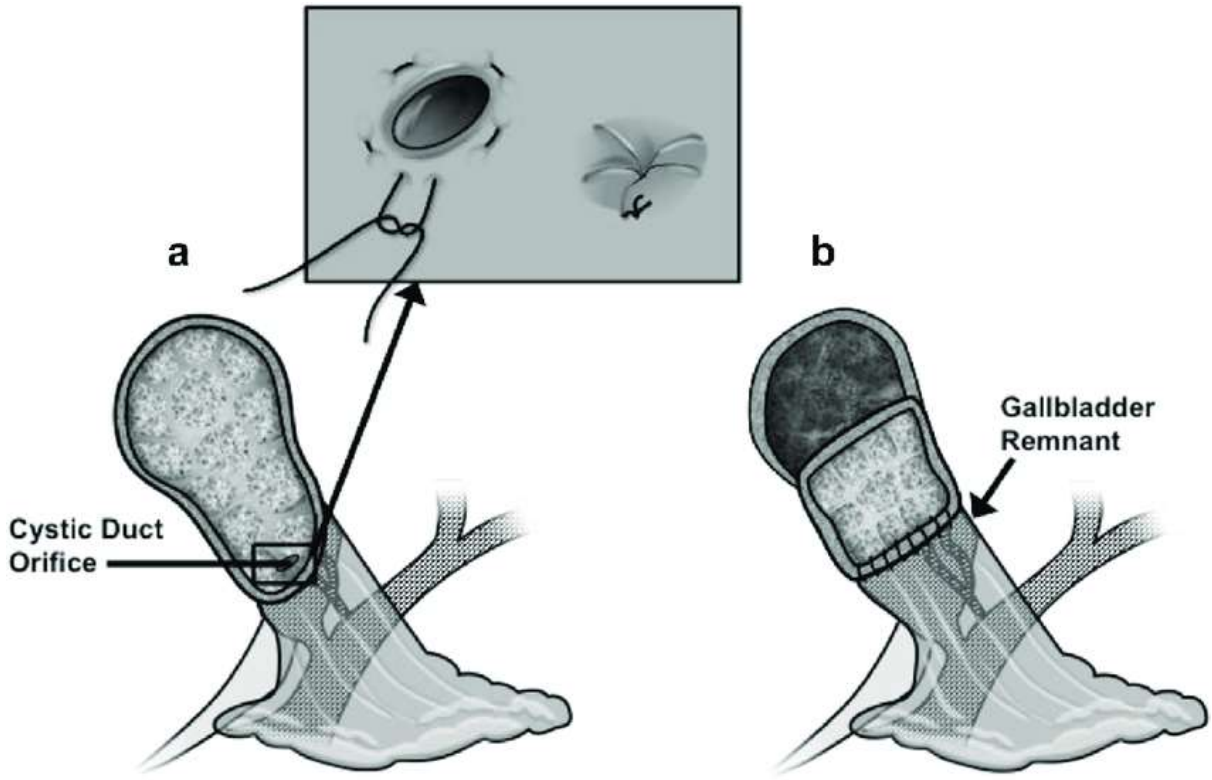

Figure 1: *Subtotal Fenestrating and Reconstituting Cholecystectomy. a. Subtotal fenestrating cholecystectomy with removal of the free, peritonealized anterior surface of the gallbladder, and subsequent closure of the cystic duct orifice if feasible. b. Subtotal reconstituting cholecystectomy with removal of a portion of the gallbladder and closure creating a new gallbladder remnant*[4]

In the last decade, there has been an increase in laparoscopic cholecystectomy rates with around 13% of them being difficult. There has been a corresponding increase in subtotal cholecystectomy rates with a conversion into open cholecystectomy rate of around 5.5%. In cases in which it is not possible to complete a laparoscopic subtotal cholecystectomy due to advanced fibrosis and inflammation, conversion to the open technique is preferable[3].

AIMS AND OBJECTIVES:

The aim of this study is to review the age- and gender- wise incidence of CBD stones in post-operative cholecystectomy cases with remnant gall bladder who presented to AMCH within the span of one year, to assess the efficacy of completion cholecystectomy, and to evaluate the complications, if any.

METHODOLOGY:

A retrospective observational study was undertaken at Assam Medical College and Hospital amongst the patients presenting with CBD stones in a post cholecystectomy status between April 2022 to April 2023. A detailed history with prior informed consent for a second, open surgery was taken and appropriate investigations such as LFT, USG of the whole abdomen and MRCP was done. Patients were followed up with operative intervention and post-operative complications.

- Inclusion criteria: All post-cholecystectomy patients (open and laparoscopic) presenting with recurrent pain abdomen and jaundice, in any age group
- Exclusion criteria: Pre-operative cholecystitis, cholelithiasis patients of any age group

CASE DETAILS:

CASE 1: Mr. CR S, 67 year old male underwent laparoscopic cholecystectomy 3 years back and presented with stump cholecystitis and cholelithiasis in the remnant gall bladder, with no CBD stones, for which he underwent an open completion cholecystectomy in september 2022.

Figure 2: *Case 1 showing remnant gall bladder stump and gallstone*

CASE 2: Mrs. L M, 55year old female underwent an open cholecystectomy 6 years ago following which she developed cholecystitis with jaundice, for which she had a second, open completion cholecystectomy with choledocholithotomy performed in september 2022.
CASE 3: Mrs. T H, 50year old female who had a laparoscopic cholecystectomy done 4 years back presented with cholecystitis and cholelithiasis and underwent a open completion cholecystectomy in july 2022.
CASE 4: Mr. S B, 39year old male underwent a laparoscopic cholecystectomy in february 2023, 2 months following which he developed recurrent pain abdomen with jaundice, MRCP revealed the presence of CBD stone for which he underwent a open completion cholecystectomy with choledocholithotomy in april 2023.

Figure 3: *Case 4 showing remnant gall bladder stump and CBD stone*

CASE DETAILS

FEATURES	CASE1	CASE 2	CASE3	CASE4
PATIENT DETAILS	Mr. CR S 67 year old male	Mrs. LM 55 year old female	Mrs. T H 50 year old female	Mr. S B 39 year old male
TYPE OF FIRST CHOLECYSTECTOMY	Laparoscopic	open	Laparoscopic	Laparoscopic
POST-OPERATIVE FEATURES	Recurrent right hypochondriac pain with jaundice	Recurrent right hypochondriac pain with jaundice	Recurrent right hypochondriac pain with jaundice	Recurrent right hypochondriac pain with persistent jaundice
INTERVAL BETWEEN FIRST AND SUBSEQUENT CHOLECYSTECTOMY	3 years	6 years	4 years	2 months
CBD STONES	Absent	Present	Absent	Present
SECOND SURGERY	Open stump cholecystectomy in september 2022	Open stump cholecystectomy with choledocholithotomy and t-tube insertion in september 2022	Open stump cholecystectomy in july 2022	Open stump cholecystectomy with choledocholithotomy and t-tube insertion in april 2023

RESULTS:

The study comprises of 4 patients with cholecystitis and cholelithiasis in a post subtotal cholecystectomy status.

The age range of the patients is between 30 and 70 years. Three out of the four subtotal cholecystectomies were done laparoscopically.

The interval between cholecystectomy and presentation of CBD stones ranged between a few months to 6 years and it was observed that longer the interval between the 1st surgery and completion cholecystectomy, the larger the size of the stump was.

Recurrent pain abdomen and jaundice were the commonest presenting complaints.

For all four cases, open completion cholecystectomy was performed and 50% cases i.e. two out of four patients had presence of choledocholithiasis.

The most common complication encountered was post-operative pain .

DISCUSSION:

Cholelithiasis with cholecystitis in a remnant gall bladder is a recognised condition in which a large gallbladder remnant becomes inflamed after subtotal cholecystectomy. Subtotal cholecystectomy however is not without risk of recurrence, and the need for further surgical or endoscopic intervention in management of complications. When this occurs, a completion cholecystectomy is indicated[1].

The "difficult gallbladder" is a case scenario in which a complete cholecystectomy incurs an increased surgical risk compared to a standard case[2]. Cholecystectomy can be difficult either due to obscuration of normal biliary anatomy (eg: by acute or chronic inflammation) or by operative exposure (eg: obesity or prior upper abdominal surgery) which eventually leads to complications like bile duct injury or CBD stones.

In the last decade, there has been an increase in laparoscopic cholecystectomy rates with around 13% of them being difficult. There has been a corresponding increase in subtotal cholecystectomy rates with a conversion into open cholecystectomy rate of around 5.5%. In cases in which it is not

possible to complete a laparoscopic subtotal cholecystectomy due to advanced fibrosis and inflammation, conversion to the open technique is preferable[3].

In our study, we have discussed 4 cases of subtotal cholecystectomy (ages between 30-70 years) who presented with features of cholecystitis and cholelithiasis with/without choledocholithiasis within an interval of 2 months to 6 years of the surgery. Three out of the four subtotal cholecystectomies were done laparoscopically. It was observed in the study that longer the interval between the 1st surgery and completion cholecystectomy, the larger the size of the stump was. (case 1 vs case 4). For all four cases, open completion cholecystectomy was performed and 50% cases i.e. two out of four patients had presence of choledocholithiasis. The most common complication encountered was post-operative pain.

CONCLUSION: Subtotal Cholecystectomy is feasible, safe and can reduce the rate of bile duct injuries for patients with difficult cholecystectomy. However, it may result in future complications and the possibility of more complex surgical reinterventions should be considered. Sub-total laparoscopic cholecystectomy is not a substitute to conversion and in difficult conditions it is not a failure for the surgeon but a wisdom. In difficult cases, these patients must be counselled regarding the recurrence of symptoms, and must be kept on follow-up. If symptoms develop, completion of cholecystectomy to remove the remnant provides symptomatic relief.

DECLARATION OF PATIENT CONSENT: The authors certify that they have obtained all appropriate patient consent forms. In the form, the patients have given their consent for their images and other clinical information to be reported in the journal. The patients understand that their names will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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