



## STUDY OF POST CHOLECYSTECTOMY BILE LEAKAGE AND ITS MANAGEMENT IN ANMMCH, GAYA

### General Surgery

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### ABSTRACT

**Aims and Objectives:** Cholecystectomy is most common surgery performed for various Gallbladder diseases. Post cholecystectomy bile leakage is a common and serious complication. Present study reveals the incidence, source, and management of bile leakage. **Materials & Methods:** This study performed in 200 operated cases of cholecystectomy in department of general surgery in ANMMCH, Gaya during October 2021 to November 2022 over the patient of age group 15-75 years. **Results:** Out of 200 operated case 100 cases undergone open cholecystectomy and 100 cases undergone laparoscopic cholecystectomy. In this study, Females were more than Male patient with average age group was 35 years. Postoperative bile leak was found in 20 cases. 12 cases of bile leakage were found in case of open cholecystectomy, 8 cases of bile leakage were found after laparoscopic cholecystectomy. Cause of bile leakage from liver bed were found in 12 case, due to CBD injury were found in 04 cases, due to cystic duct injury were found in 02 cases and due to injury of accessory bile duct in 02 cases. Most of them were managed conservatively with drain, some of them managed by laparotomy and ligation of cystic duct and accessory cystic duct and some of them managed by endoscopic stenting. No mortality was observed in our study. Post operative hospital stay was 15 days on average. **Conclusions:** Post cholecystectomy bile leak was more common in open cholecystectomy in comparison to laparoscopic cholecystectomy. Majority of bile leak managed conservatively. Common Bile duct injury, Accessory bile duct injury, or cystic duct injury need early diagnosis and its management either by endoscopic stenting or laparotomy.

### KEYWORDS

Cholecystectomy, Biliary leakage, CBD Injury, Laparotomy, Endoscopic stenting

### INTRODUCTION:

Cholecystectomy is one of the most frequently performed surgery for different gallbladder diseases, either performed by open surgical method or by laparoscopic method. Surgery is associated with many avoidable complications need cautious approach. Laparoscopic cholecystectomy has now replaced the open cholecystectomy as the gold standard for different gallbladder diseases unless until absolute contraindication. Sometimes laparoscopic cholecystectomy may be converted to open cholecystectomy due technical reason or anatomical difficulty and patient safety. Complication associated with cholecystectomy are bile duct injury, bile leak from accessory bile duct, slipped knots or clip displacement from cystic duct, retained stone in common bile duct, gallbladder perforation, bleeding from liver, cystic or hepatic artery, subphrenic abscess, billioma formation, post cholecystectomy bile leak, biliary fistula formation, generalised peritonitis and sepsis. Post cholecystectomy bile leak is generally due to bile duct injury, injury to accessory bile duct, leak from liver bed, slipped knots or clip displacement from cystic duct. Bile duct injury are preventable but associated with considerable morbidity and mortality. Bile duct injury has two fold higher incidence in case of laparoscopic cholecystectomy than open cholecystectomy (0.6% vs 0.3%) (1-3). Biliary leakage can occur after laparoscopic cholecystectomy in 0.3% -2.7% of patients. ERCP has emerged as minimal invasive method of treatment for biliary leakage. Most of the patient of biliary leakage is managed conservatively by keeping drain in situ till spontaneous resolution. MRCP diagnosed well the cause of biliary leakage and plan of management accordingly. Sealing of leakage can be accomplished by various endoscopic technique.

These methods include biliary sphincterotomy alone, biliary stenting with or without sphincterotomy and nasobiliary drainage. All of these method allow leak to heal in most cases. Although there is no consensus regarding the optimal endoscopic intervention, recent data are suggestive of combination of biliary sphincterotomy and the placement of transpapillary biliary stent has better outcome for the treatment of high grade and more complex biliary leak. However, despite the high success rate and safety of endotherapy for bile leak there are reports of difficult to treat refractory bile leak that require multiple endoscopic interventions and sometimes open surgery. In recent years, the temporary placement of a fully covered self expandable metal stent has emerged as an effective therapy for refractory bile leaks.

### MATERIALS & METHODS:

200 cases of operated cholecystectomy in department of general

surgery of ANMMCH, Gaya from October 2021 to november 2022 with age group 15 -75 years were taken for our study. All cases were registered fulfilled the inclusion criteria.

### RESULTS:

Out of 200 cases 100 cases were undergone open cholecystectomy and 100 cases were operated by laparoscopic method.

| Method of cholecystectomy | Number of patients operated |
|---------------------------|-----------------------------|
| open                      | 100                         |
| Laparoscopic              | 100                         |

Females were more than Males in the study

| Gender  | Number of patients |
|---------|--------------------|
| Females | 150                |
| Males   | 50                 |

Average age group was 35 years. Post cholecystectomy bile leak was found in 20 cases. 12 cases of bile leakage were found in case of open cholecystectomy. 08 cases after laparoscopic cholecystectomy.

| Post cholecystectomy bile leak | Number of cases |
|--------------------------------|-----------------|
| Open cholecystectomy           | 12              |
| Laparoscopic cholecystectomy   | 08              |

Cause of bile leakage were from liver bed in 12 cases, CBD injury in 04 cases, Cystic duct injury in 02 cases and from injury to accessory bile duct in 02 cases.

| Cause of bile leak            | Number of patients |
|-------------------------------|--------------------|
| From liver bed                | 12                 |
| CBD injury                    | 04                 |
| Cystic duct injury            | 02                 |
| Injury to accessory bile duct | 02                 |

They were managed conservatively by drain kept in situ for more postoperative day till biliary leak stop spontaneously, Laparotomy with ligation of cystic duct and accessory duct and endoscopic stenting.

| Method of management    | Number of patients |
|-------------------------|--------------------|
| Conservative            | 15                 |
| Laparotomy and ligation | 2                  |
| Endoscopic stenting     | 3                  |

No mortality was observed in our study with average postoperative hospital stay was 15 days

**CONCLUSIONS:**

Post cholecystectomy biliary leakage was more common in open method than Laparoscopic method. Most of the cases of biliary leaks was managed conservatively and few were managed by open laparotomy with ligation of cystic duct/accessory cystic duct, and few were managed endoscopic stenting. In cases of biliary leak main strategies should be early diagnosis and timely management. Intraoperative drain placement in case of cholecystectomy help in early diagnosis of biliary leak and helpful in conservative management of biliary leakage.

**DISCUSSION:**

The Biliary tract is a complex organ system that performs the vital task of collecting, storing and delivering bile to gastrointestinal tract. Diseases of biliary tract can be extremely painful, debilitating, and sometimes life threatening. Deziel et al. reported identifying the site of biliary leakage in 107 patients, as from the cystic duct in 57 cases, from the gallbladder fossa in 24 cases, from the CBD or hepatic duct in 18 cases, from aberrant bile duct in 7 cases, and from liver biopsy site in 1 cases. Retained CBD stone were also found in 3 patient with cystic duct leak. In our study bile leakage from liver bed in 12 cases, CBD injury in 04 cases, cystic duct injury in 02 cases, and from accessory bile duct in 02 cases. Some surgeons have managed biliary leak by open surgical laparotomy. More than one surgery is needed for these patients. There are also high mortality (8%) and morbidity rates in the early postoperative period. Some study suggest laparoscopic correction or drain placement is successful in patients who have not developed jaundice or retained biliary stone. But this method is not suggestive for major biliary leak. Percutaneous method of management have some advantages as well in cases of dilated biliary tree. There is also chances of haemorrhage and biliary leak during stenting. But some studies have shown percutaneous method is effective. Stenting is more accepted method of treatment than naso biliary drainage. The pressure gradient between biliary tree and duodenum disappear through stenting and biliary flow becomes easier. We use naso biliary drainage more than stenting which shortens the recovery period with the help of higher bilio-atmospheric gradient than bilio-duodenal gradient. Furthermore, it is possible to monitor the leakage without risk of second endoscopic procedure and premedication but, nasobiliary drainage is not comfortable to the patients.

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