

## Laparoscopic cholecystectomy—an evaluation study in a rural hospital.

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**Abstract: Background/Aims:** Laparoscopic Cholecystectomy is here to stay and is today the procedure of choice for treatment of gall stone disease. This study was undertaken to evaluate 260 cases of laparoscopic cholecystectomy with respect to time taken in surgery, intra operative and post operative complications, to find the reasons for conversion to open cholecystectomy, time of discharged from hospital and mortality.

**Materials And Methods:** In this retrospective study a total number of 260 patients who underwent laparoscopic cholecystectomy from 1<sup>st</sup> January 2017 to 31<sup>st</sup> December 2017 at our hospital were observed. The result and complications of laparoscopic surgery were documented in audit for each laparoscopic cholecystectomy and at the end the result are analyzed.

**Results:** There was no common bile duct injury in our study and we had 1.92% conversion to open cholecystectomy . There were no cases of post operative abdominal abscess, port site infection, port site hernia, common bile duct stricture or mortality in our study.

**Conclusion:** Gallstones are the most common biliary pathology. Laparoscopic cholecystectomy is the mainstay of management of uncomplicated gallstones disease and is associated with high success rate. Our result is comparable to international standards. “Critical view of safety (CVS)” is an essential prerequisite for prevention of bile duct injuries.

**Keywords:** Gallstones, Calculus Cholecystitis, Critical view of safety (CVS), Laparoscopic cholecystectomy.

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### I. Introduction

Laparoscopic surgery (LS), also termed minimal access surgery has brought a paradigm shift in the approach of surgical care. Laparoscopic cholecystectomy is here to stay and is today the gold standard of management of uncomplicated gallstones disease. Patients accepted this new modality most readily due to its advantages like less pain, smaller incision, earlier recovery and less hospitalization. Laparoscopic cholecystectomy is an endoscopic operative technique for removal of gallstone. It is guided by an endoscope, camera and video monitor and is performed through four cannulas (1). This is a safe procedure with low complication, mortality and morbidity rate (2). The gallbladder is dissected from liver under observation on monitor. The possible complications are bleeding, injury to common bile duct and technical problem, such as gallbladder perforation. In this study, we share our experience of 260 cases of laparoscopic cholecystectomy.

### II. Materials And Methods

This study included 260 patients who underwent laparoscopic cholecystectomy for chronic calculus cholecystitis for a period of 12 months from 1<sup>st</sup> January 2017 to 31<sup>st</sup> December 2017 in the department of surgery at Tomo Riba Institute of Health and Medical Sciences (TRIHMS), Naharlagun. All patients having symptomatic gallstone disease were included in this study and all laparoscopic cholecystectomy were performed with four ports. Patients having acute cholecystitis, CBD stone, cardiovascular disease, COPD, gallbladder malignancy, previous history of laparotomy and pregnancy were excluded from this study. Following the dissection of the triangle of Calot’s critical view of safety (CVS) were established (Fig.1). Experience were

recorded in terms of technical difficulties encountered by surgical team, duration of surgery, intra-operative, post operative complications, reasons for conversion to open cholecystectomy and hospital stay of patients.



**Fig.1** Critical view of safety (CVS) in Laparoscopic cholecystectomy.

### **III. Results**

Our patients were between 15 years to 65 years. Symptomatic gallstone was more common in females with 195 patients (75%) and 65 males (25%) patients. Intra-operative complications we encountered cystic artery bleeding in 8 cases(3%), Obscure anatomy of Calot's two cases(0.8%) and five cases of frozen hard Calot's(1.92%) required conversion to open cholecystectomy for safe completion of surgery. In 8 cases (3%) there was gallstone spill in the peritoneal cavity. This complication occurred due to perforation of gallbladder at the time of dissection of gallbladder. There was no hollow viscus injury or common bile duct injury. We had to convert 5 cases (1.92%) to open cholecystectomy due to dense adhesion and ill-defined Calot's triangle (Fig.2). Average duration of procedure was 45 minutes. Average hospital stay was 3 days. There was no mortality in this study.

Post operative complications - Post-operative two patients (0.8%) had minor bile leak from the drain which continued for about 5 days and patients were managed conservatively and discharged in satisfactory condition. 3 patients (1.16%) had post-operative fever which lasted for three days and responded to antibiotic. Postoperative pain in all the patients was relieved by moderate dose of non-steroidal anti-inflammatory drugs. Requirement of analgesics was experience only for first and second post-operative days. Average hospital stay was 3 days. There was no mortality in this study.



**Fig.2** Ill-defined Calot's triangle in Laparoscopic cholecystectomy.

### **IV. Discussion**

Gallstones are the most common biliary pathology. It is estimated that gallstones affect 10-15 percent of population in western societies. They are asymptomatic in the majority of cases (80%). Approximately 1-2% of asymptomatic patients will develop symptoms requiring surgery per year, making cholecystectomy one of the most common operation performed by general surgeon(3). In 1992 the national institute of health consensus development conference stated that laparoscopic cholecystectomy “provides a safe and effective treatment for

most patients with symptomatic gallstones” (4). Although 2% to 15% of patients require conversion to open cholecystectomy for various reasons, but irrespective of morbidity and mortality statistics do still favour laparoscopic cholecystectomy over open cholecystectomy (5). This procedure has a low rate of complications (2-4%), bile duct injury (0.2-0.5%) and mortality (<0.1%) (6). We had overall 1.92% conversion to open cholecystectomy which is comparative to other published literature which is around 1.95% to 13% (7). We could achieve zero common bile duct injury.

Common reasons for conversion in laparoscopic cholecystectomy to open cholecystectomy include frozen Calot’s triangle due to chronic inflammation, gastrointestinal perforation during dissection, uncontrolled Calot’s triangle bleeding and obscure anatomy (8). In our experience complications rate was comparatively less than the complications rate published in other studies. So our experience suggests that laparoscopic cholecystectomy can be safely performed with minimal complications and is the treatment of choice for uncomplicated symptomatic gallstones disease.

## V. Conclusion

Gallstones are the most common biliary pathology. Laparoscopic cholecystectomy is the current “gold standard” for the treatment of symptomatic gallstones disease and is associated with high success rate. The “critical view of safety (CVS)” can be used as a safe tool to prevent bile duct injury in laparoscopic cholecystectomy.

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