



**ORIGINAL RESEARCH PAPER**

**Surgery**

**A PROSPECTIVE STUDY:INCIDENCE AND CONSEQUENCESOF GALLSTONE SPILLAGE DURING LAPROSCOPIC CHOLECYSTECTOMY AT PMCH,PATNA**

**KEY WORDS:** Laparoscopic cholecystectomy,gall bladder perforation,gall stone spillage,bile leak

<b>Dr. Sushil Kumar</b>	Senior Resident Department of general Surgery PMCH Patna, Bihar India
<b>MD. Habibullah Ansari*</b>	Junior Resident Department of general Surgery PMCH Patna, Bihar India*Corresponding Author
<b>Dr. Binod Kumar</b>	Associate Professor Department of general Surgery PMCH Patna, Bihar India
<b>MD. Asjad Karim Bakhteyar</b>	Junior Resident Department of general Surgery PMCH Patna, Bihar India

**ABSTRACT**

**INTRODUCTION:** Biliary tract disorders are one of the commonest abdominal conditions that the surgeons, gastroenterologists and radiologists come across. Among these, chronic cholecystitis associated with cholelithiasis is a frequently encountered pathology. Laparoscopic cholecystectomy is now regarded as the treatment of choice for symptomatic gallstones diseases around the world. Two operative complications, namely bile duct injury and complications due to spillage of stone/bile within the peritoneal cavity are reported to occur with greater frequency during laparoscopic cholecystectomy. This study was undertaken to find the incidence and consequences of gallstones spillage during laparoscopic cholecystectomy at PMCH, Patna.

**MATERIAL AND METHODS:** The present study was performed on 100 patients with clinical presentation of cholelithiasis who were seen in general surgery OPD and WARD in Patna Medical College and Hospital (PMCH), Patna. We included all the patients undergoing laparoscopic cholecystectomy for symptomatic gall stone disease within the age group of 30-55 years.

**EXCLUSION CRITERIA:** All immunocompromised patients, patients on immunosuppressive therapy, those having preoperative fever and associated choledocholithiasis.

**RESULTS:** Spillage of gallstones was the major complication occurring in 15 cases where maximum number of stones was recovered during the procedure. Spilled gallstones were common in females than males. A total of 5 patients had bile leakage. Average hospital stay was 2 days. There was no mortality in our study.

**CONCLUSION:** Gallbladder content spillage is a common occurrence and whenever it occurs, the goal of the surgeon should be to manage the complications with minimal harm to the patients and to reduce the unwanted consequences. Surgeon should be very careful and must attempt to remove all visible stones and irrigate abdominal cavity.

**INTRODUCTION**

Gallstones constitute a major health problem throughout the world.<sup>1,2</sup>Its prevalence in the United States adult population is around 10%,rising to 30% in over 70 years age group. Cholecystectomy is the treatment of choice for gallstone disease.<sup>3</sup>Carl August Langerbachperformed first open cholecystectomy in 1882, while PhilippeMouret performed first laparoscopic cholecystectomy in Lyon, France in 1987.<sup>4</sup>Laparoscopic cholecystectomy (LC) has been the gold standard for symptomatic gallstones for 15 years. Over the time, the rate of common bile duct injuries from LC has declined. Unfortunately, the incidence of spillage of gallstones has remained unchanged.

Gallbladder perforation with stone spillage into the peritoneal cavity is more frequent with laparoscopic cholecystectomy as compared with open cholecystectomy. Early reports on laparoscopic cholecystectomy stated that stones left in the peritoneal cavity had no deleterious effect.<sup>5</sup>Although the incidence of spilt gallstones and their complications are low, they are of large variety.<sup>6</sup> Thus, it makes a significant problem. The variety of complications caused by lost gallstones may range from simple surgical site infection to more serious forms like bronchololithiasis.The incidence of complications related to spillage of gall-stones during laparoscopic cholecystectomy as per international data ranges between 2.3 and 7 %. This incidence increases by greater than two fold when the stones are unretrieved.

In our study we determined to find the incidence and consequences of gallstones spillage during laparoscopic cholecystectomy at PMCH, Patna.

**MATERIALS AND METHODS:**

This study was carried out on 100 patients in department of general surgery, PMCH, Patna after the approval of Hospital Ethical Committee from June 2017 to April 2018. Patients with obstructive jaundice, carcinoma gall bladder, comorbid diseases

and history of upper abdominal surgery were excluded as these are the confounders and would produce bias in the study results. Patientshaving gallstones were admitted from OPD.They were registered for the study after obtaining nformed written consent. All relevant investigationswere performed. Fitness for anaesthesia was assessed by ASA Scoring system. All the included patients underwent Laparoscopiccholecystectomy. The incidence of spillage of gallstones were recorded and the consequences in the long term were recorded.

**RESULTS:**

A total of 100 patients had laparoscopic cholecystectomy during the study period. Ages of the patients were between 30-55years. Male to female ratio was Found 1:3. In our study 34 cases were male and 66 were females. Spillage of gallstones was the major complication occurring in 15 cases where maximum numbers of stones were recovered during the procedure. Spilled gallstones were common in females than males. There were 5 patients having bile leak.

Average Hospital stay was 2 days. 85 patients were discharged within 2 days, 10 patients on 3rd day, and 5 patients on 4th day. Hospital stay was prolonged in the patients having bile leak. There was no mortality in our study. No complications were noted due to spilled gallstones in the peritoneal cavity.

**DISCUSSION:**

Cholecystectomy has evolved from open to laparoscopic approach over the past decade, laparoscopy being the current gold standard for treating gallstone disease. Certain situations are related to higher risk of gallbladder perforation during laparoscopic cholecystectomy. This includes acutely inflamed gallbladders which have friable tissue which is susceptible to tear. Dense adhesions around the gallbladder make dissection potentially more difficult, and a tense, distended gallbladder that has not been decompressed is at risk of perforation. This may occur when the gallbladder is manipulated by laparoscopic instruments or during dissection from the liver bed. Spilled stones may also be

caused by the slipping of the cystic duct clip or the tearing of the gallbladder when it is being retrieved from the port site.

The fate of spilt gallstones is not clearly known. In the earlier era of laparoscopic cholecystectomy, it was recommended that spilt gallstones are harmless and can be left alone. Earlier reports by Clinc in the beginning of the era of laparoscopic cholecystectomy claim no deleterious effect from spilt gallstones left in the peritoneal cavity through rat models.<sup>7</sup> Similar conclusions were drawn by Welch with animal models.<sup>9</sup>

In our study of 100 patients, we tried to find the incidence of spillage of gallstones and what would happen if contents of bile and gallstones get spilled during laparoscopic cholecystectomy. In this study, patients had a mean age of 45.08 years ranging from 30 to 55 years. Out of 100 patients, there were 66 females and 34 males suggesting cholelithiasis is more common in females. The incidence of spillage of gallstones was recorded (15%) and the consequences in the long term were recorded. No patients in our study developed any jaundice, dyselectrolytemia or intra-abdominal abscess. All these findings can be attributed to meticulous removal of all stones, thorough irrigation of peritoneal cavity with saline, good antibiotic coverage and judicious use of USG-whole abdomen to rule out any collection.

#### CONCLUSION:

The gold standard treatment for cholelithiasis is Laparoscopic cholecystectomy. Gallbladder perforation generally occurs as a result of intraoperative retraction, dissection and extraction of gallbladder especially when gallbladder is acutely inflamed and fragile and there is peri-gallbladder omental adhesions. Gallbladder content spillage is a common to occur and if it occurs, the aim of the surgeon should be to manage these complications with least harm to the patients and to reduce unwanted consequences. Surgeon should be very careful to remove all visible stones and should irrigate abdominal. If spillage occurs it should be documented, thorough irrigation of peritoneal cavity should be done and patients should be kept under close observation. There is no indication for regular conversion to open surgery just for removal of spilled gallstones. Complications can also present late with septic features in some patients. They are more common after spillage of both bile and stones. Most of the complications of spillage can be managed by minimal invasive techniques like percutaneous drainage of abscess. However, laparotomy may be needed to address large abscess formation with mass within it.

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