INTRODUCTION

Laparoscopic cholecystectomy (LC) is the most common procedure of choice in surgical treatment of gallbladder diseases. Gallbladder perforation is increasing in frequency along with increasing efforts to perform minimally invasive surgery, which has limitation in the visual field and mobility of the surgical instruments. The incidence of perforation of the gall bladder during LC is 13%–40%.[1] The gall bladder perforation leads to spillage of bile or gallstones into peritoneum leading to benign to very severe complications.

Objective

To find the incidence of gall bladder perforation during Laparoscopic cholecystectomy

To assess the clinical outcome among patients with gall bladder perforation during LC.

MATERIALS AND METHODS

Study Design: Prospective study

Study Location: Dhanalakshmi Srinivasan Medical College, Perambalur, India.

Target population: Patients with gallbladder disease who underwent LC

Sampling method: Convenience sampling

Study period: June 2021 - May 2022

Sample size:

Calculated using Zα²pq/d²

α value = 1.96

p = 13%, q = 100-p

d = Allowable absolute precision at 7.5%
with 10% attrition rate
Sample size is 84 rounded off to 85

Eligibility Criteria
Patients admitted for Laparoscopic cholecystectomy above 18 years

Data analysis
The Data thus collected is entered in Microsoft excel sheet & analyzed using SPSS 21
The categorical variables expressed in proportion and continuous variable in mean
The independent t test and chi square test is used to find the association. (p<0.05 is significant)

RESULTS
The mean operative time, mean length of hospital stay and pain score on P O day 1 and 2 is significantly higher in accidental G.B perforated cases when compared to non-perforated cases.
Also trocar site infection and ileus incidence is significantly higher in GB perforated cases.
There is no significant difference in incidence of leucocytosis, fever and vomiting between perforated and non-perforated cases

Gallbladder perforation leads to prolongation of the operative time and postoperative hospital stay and consequently an increase in the total hospital costs, which reduces the advantage of LC.
A study by Suh et al., have shown results similar to our study with the mean operative time and duration of postoperative hospitalization were longer in the perforated group (P = .015 and P = .001).
Pain scores on the P O days 1 and II were higher in the perforated group (P = .009 and P = .034).
Complications such as ileus and trocar site infection developed more frequently in patients with a gallbladder perforation (P =.001 and P = .004).

| Table 1: Causes of accidental gall bladder perforation (N=16) |
| Causes | n | % |
| Dissection of hepatic fossa | 10 | 62.5 |
| Traction of GB | 3 | 18.75 |
| Dissection of cystic duct | 3 | 18.75 |

| Table 2: Clinical outcome in GB perforation |
| OUTCOME | Non perforated mean +/- S.D | Perforated mean +/- S.D | P value |
| Operative time ( in Mins) | 52.7+/-0.75 | 63.2+/-2.6 | 0.004* |
| P.O Hospital stay (in Days) | 3.8+/-0.38 | 7.2+/-0.95 | 0.004* |
| P.O Pain score I day II day | 2.6+/-0.49 | 4.2+/-0.5 | 0.003* |
| 1.8+/-0.38 | 3.2+/-1.8 | 0.006* |
| Leukocytosis on P.O 1 n(%) | 24(34.7%) | 7(43.4%) | 0.56 |

| Table 3: Complications between perforated and non-perforated GB |
| Complication | Non perforated n(%) | Perforated n(%) | P value |
| Fever | 16(23.2) | 2(12.5) | 0.50 |
| Nausea and vomiting | 13(18.8) | 2(12.5) | 0.72 |
| Trocar site infection | 6(8.6) | 6(37.5) | 0.004* |
| Ileus | 9(13.1) | 7(43.5) | 0.006* |

CONCLUSION
1. Gallbladder perforation during LC causes postoperative pain, ileus, and trocar site infection and has lead to an increase in the duration of hospitalization, thereby reducing few advantage of a laparoscopic procedure.
2. There is need of meticulous dissection performed during surgery to prevent gallbladder perforation.
3. To minimize the risk of gallbladder perforation, some technical modifications and new methods for dissection of the gallbladder from the liver bed have to be attempted.
4. Also, the surgeons should not hesitate to record the intra operative events of spillage of bile and gallstones and manage/monitor the patient for the possible complications.

Limitations
1. The wound infection diagnosis and discharge of patients were assessed/decided by surgeons depending on their own clinical experiences that it might lead to bias in our results
2. Laparoscopic cholecystectomies were done by different surgeons for different indications and hence operation time may depend on the diagnosis, expertise and experience of each surgeon.

REFERENCES
