ABSTRACT

Background

Cholelithiasis is the most common biliary pathology, with a prevalence of 10 to 15%. It is symptomatic in approximately 1 to 2% of patients. In 1992, National Institute of Health (NIH) consensus development stated that laparoscopic cholecystectomy “Provides a Safe and Effective treatment for most patients with symptomatic gallstones”.

Laparoscopic cholecystectomy (LC) has become the gold standard in the treatment of symptomatic gall stones. It has replaced open cholecystectomy as the therapeutic modality in the treatment of cholelithiasis.

Laparoscopic cholecystectomy has advantages of less postoperative pain, reduced duration of hospital stay, return to work earlier and good cosmesis. Laparoscopic cholecystectomy may be rendered difficult by various problems encountered during surgery such as difficulties in accessing the peritoneal cavity, creating a pneumoperitoneum, dissecting the gall bladder or extracting the excised gall bladder.
It is important to realize that the need for conversion to laparotomy is neither a failure nor a complication but an attempt to avoid complication and ensure patient safety. Prediction of a difficult LC would allow the surgeon to discuss the likelihood of conversion with the patient and prepare him/her psychologically as well as planning their recovery and explaining their absence from work.

The aim of this study was to predict difficulty of LC and the possibility of conversion to open cholecystectomy (OC) before surgery using the clinical and ultrasonographic criteria.

**Objectives of study**

1. To determine the predictive factors for difficult laparoscopic cholecystectomy.

2. To study the risks of conversion from laparoscopic to open cholecystectomy.
Methods

The materials for the present study on “PRE-OPERATIVE PREDICTION OF DIFFICULT LAPAROSCOPIC CHOLECYSTECTOMY USING CLINICAL AND ULTRASONOGRAPHIC PARAMETERS” comprises of 80 cases admitted to our hospital from September 2013 to August 2014.

The methods for the study included screening of patients who presented with upper abdominal pain, vomiting or dyspepsia. Such patients are studied in detail clinically and investigated as per proforma detailed below. Hematological and biochemical investigations (CBC, RFT, LFT) are done. All patients are subjected to ultrasonographic evaluation.

The patients confirmed by USG examination are evaluated with following factors: age, sex, BMI (</>30), h/o previous hospitalization, h/o previous abdominal surgeries, h/o acute cholecystitis / pancreatitis.

Sonographic findings: GB wall thickness (>/> 3 mm), pericholecystic collection, number (solitary versus multiple) and liver parenchyma (Normal, fatty infiltration, liver fibrosis).
Following evaluation the patients will be subjected to laparoscopic cholecystectomy and the following **operative parameters** : access to peritoneal cavity (easy/difficult), bleeding during surgery (normal/abnormal), gall bladder bed dissection (easy/difficult), injury to duct/artery, extraction of gall bladder (easy/difficult), or conversion to open surgery are noted.

Analyses of pre operative risk factors, their relation to the dependent factors are performed using -t-test, -chi squared test and significance (p value .05) is demonstrated.

Results would be computed using relevant software (SPSS).

**RESULTS**

The highest age incidence of cholelithiasis was in the 4th decade, and was more common in females..

Ultrasonography detected gallbladder stones in all patients, wall thickening in 28(35%), pericholecystic collection in 18(22.5) and liver fibrosis in 16(20%).

Laparoscopic cholecystectomy was successfully done in 72 patients. The access to peritoneal cavity was difficult in 22 patients (27.5%), GB bed dissection was difficult in 21 patients (21.3%),
abnormal bleeding occurred in 20 patients (25%) and there was difficulty in extraction of GB in 19 patients (23.8%). Conversion to open surgery occurred in 8 patients (10%).

BMI >32.5, history of cholecystitis, previous abdominal surgery, GB wall thickness>3mm, pericholecystic collection, multiple stones and liver fibrosis were significant predictors of difficult laparoscopic cholecystectomy.

There were no significant predictive factors for conversion to open surgery on multivariate analysis in this study.

**CONCLUSION**

The clinical and ultrasonographic finding helps to predict a difficult Laparoscopic cholecystectomy. This information may be useful to both the patient and the treating surgeon.

The conversion rate from laparoscopic cholecystectomy to open cholecystectomy was 10% and there were no significant predictive factors on multivariate analysis in this study.

**KEY WORDS:** LAPAROSCOPIC CHOLECYSTECTOMY, PREDICTIVE FACTORS