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General Surgery

A STUDY ON DIFFERENT PREOPERATIVE PREDICTORS OF DIFFICULT LAPAROSCOPIC CHOLECYSTECTOMY

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ABSTRACT

Background: Laparoscopic cholecystectomy is now the main choice for treatment of gallstone disease. During LC we cannot tell exactly how much time it will take and what complication we will face while doing and sometimes the need to convert the laparoscopic surgery into open. To overcome this problem, we have done a study to determine the different preoperative predictors which will help in determining a difficult laparoscopic cholecystectomy.

Aim: The aim was to find out different preoperative predictors of difficult laparoscopic cholecystectomy.

Materials and Methods: The study was done from June 2017 to May 2018 in department of general surgery Jawaharlal Nehru medical college, Bhagalpur, Bihar. The study included 100 cases.

Results- Mean patient age was 36 years. Out of 100 patients included in this study 84 (84%) were easy, 12 (12%) were difficult and 4 (4%) patients required conversion to open cholecystectomy. The overall conversion rate was 4%. More than 2 previous attacks of cholecystitis, GB wall thickness of >4mm, impacted gall stone and Pericholecystic collection were all statistically significant for predicting the difficult LC and its conversion.

Conclusion: study shows that the preoperative evaluation can predict operative difficulty for laparoscopic cholecystectomy to a good extent.

KEYWORDS : Difficult, laparoscopic cholecystectomy, predictors, scoring

Introduction:

Laparoscopic cholecystectomy is the commonest procedure for cholelithiasis. It has many advantages like, its minimal invasive, less pain andearly recovery. At times LC becomes diffi cult. Sometimes it takes longer time and occasionally it requires conversion to open cholecystectomy. It is very difficult to say preoperatively whether it is going to be easy or difficult. Gallstone disease is one of the most common problems affecting the digestive tract. The prevalence of gallstones is related to factors like age, gender, and ethnic background. The prevalence of gallstone varies widely from place to place. It is estimated that approximately 20 million people in the United States have gallstones and that approximately 1 million new cases of cholelithiasis develop each year. In India the prevalence is estimated to be around 4% changing incidence in India is mainly attributed to westernization of diet, change in socioeconomic structure and availability of ultrasound as investigation in both rural and urban areas. Mouret introduced laparoscopic cholecystectomy in 1987, which brought a radical change in the treatment of patients with gallstones. Laparoscopic cholecystectomy (LC) is now the standard procedure for the treatment of symptomatic gallbladder stones. Although laparoscopic cholecystectomy has numerous advantages including reduced hospitalization, decreased morbidity, short recovery time, and better cosmesis [4-5], it has increased risk of injury to common bile duct (CBD), duodenum, bowel, iliac vessels, high conversion rate in acute cholecystitis and difficulty in management of simultaneous CBD stones.

Prediction of difficulty in laparioscopic cholecystectomy can be made reliably if the surgeon has the benefit of accurate preoperative predictive factors. Advantages of accurate prediction of difficulty in LC include appropriate patient information, adequate surgeon preparation and proper operation scheduling, efficient hospital admission and bed usage.

Materials and methods:

The study was done from June 2017 to May 2018 in department of general surgery Jawaharlal Nehru medical college, Bhagalpur, Bihar. The study included 100 cases.

Inclusion Criteria-

All patients with symptomatic gall bladder disease, Patients of all ages and both sexes were included in the study.

Exclusion criteria-

Patients with Carcinoma of gall bladder, Jaundice or abnormal liver function tests, Cirrhosis, Common bile duct stones (CBD stones), Empyema gall bladder, Acute pancreatitis, Pregnancy. There are total 15 score from history, clinical and sonological findings. Score up to 5 predicted easy, 6–10 difficult and >10 are very difficult.

Scoring parameters-

Age	<50 years (0)	>50 years (1)	
Sex	Female (0)	Male (1)	
H/o Of Previous Admissions	No (0)	Yes (4)	
Bmi	<25 (0)	25.0–27.5 (1)	>27.5 (2)
Abdominal scar	No (0)	Yes (2)	
Palpable GB	No (0)	Yes (1)	
Wall thickness	Thin (0)	Thick > 4 mm (2)	
Pericholecystic collection	No (0)	Yes (1)	
Impacted stone	No (0)	Yes (1)	

Scoring system-

Easy	0-5
Difficult	6-10
Very difficult	11-15

Results:

Mean patient age was 36 years. The maximum numbers of patients were in the age group of 31-40 years (64%). Out of 100 patients included in this study 84 (84%) were easy, 12 (12%) were difficult and 4 (4%) patients required conversion to open cholecystectomy. The overall conversion rate was 4%.

One patient with more than 2 previous attacks of cholecystitis has been converted into open.

GB wall thickness of >4mm in one patient was converted. One patient with impacted gall stone and Pericholecystic collection were converted into open. Hence all statistically significant for predicting the difficult LC and its conversion The difficulty in procedure rate in males was not significantly different from that in females. Patients with history of an acute attack had a significantly difficult procedure. Obesity was one of the reasons for difficult LC. Patients with previous abdominal scar had difficult LC, but none was converted into open. All patients with contracted gallbladder were difficult laparoscopically, but none of the cases was converted to open procedure.

Discussion:

Many factors are given as difficult predictors. Age above 50 makes it

difficult and conversion is higher with increasing age. In our study, the majority of patients were in the age group of ≤50 years (84 patients) and only 16 cases were >50 years. However, in our study we found no significant correlation between age and the difficult level of surgery. This could be because of the small sample size of the study population and also there was an unequal distribution of the patients into different age group with only five cases in >50 years age group with clustering of cases in ≤50 years age group. Obese patients may have a difficult laparoscopic surgery due to Port placement in obese patient takes longer time due to the thick abdominal wall. Dissection at the Calot's triangle is also technically difficult due to the obscure anatomy because of excessive intraperitoneal fat and difficulty in the manipulation of instruments through an excessively thick abdominal wall. In our study, we found no correlation between BMI and difficult level of surgery. In our study we dint find any difficulty in procedure rate in males and females.

Pericholecystic collection was found to be a predictor of difficult LC. We found a strong Correlation between pericholecystic collection and difficult LC. BMI >27.5 kg/m2 has got difficult LC. Clinically palpable gallbladder is not a predictor for of difficult cholecystectomy.

Upper abdominal surgery is reported to have high difficult LC as there are dense adhesions in the bowel.

Conclusions-

The study shows that the preoperative evaluation can predict operative difficulty for laparoscopic cholecystectomy to a good extent. The impaction of stone at the neck of the gall bladder followed by the increased gall bladder wall thickness, pericholecystic collection and history of previous operation were the most accurate predictors of the potential operative difficulty and conversion to open procedure.

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