Original article:

Evaluation of Role of Early Laparoscopic Cholecystectomy in Acute Calculus Cholecystitis

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ABSTRACT

Laparoscopic cholecystectomy is a gold standard surgical treatment for acute calculous cholecystitis, however its role and its timing in the management of acute calculus cholecystitis remain controversial. Generally, in the first 48 to 72 hours of the onset of symptoms the tissue planes are edematous but structures are identifiable and tissue planes separate without difficulty, which is what this study will focus on.

A Cross Sectional study was carried out on 390 patients diagnosed as acute calculus cholecystitis by ultrasound (Age > 18 years) that were admitted to surgery wards of National Institute of Medical Science and Research, Jaipur through Emergency / OPD basis during the period of one and half year (1st January 2016 – 30th June 2017).

In the study, the maximum incidence of acute calculus cholecystitis was found in the age group of 41-50 year (22.82%). The mean age was seen to be 50.73 years. There was heavy female preponderance at the ratio 2.33:1.Symptoms were as follows: 80.51 % had a chief complaint of pain in right hypochondrium, while 76 patients (19.49%) presented with epigastric pain. 67.70% of the patients presented with fever. 75 Patients presented with nausea along with pain abdomen and 57 patients presented with vomiting, whereas 57 patients presented with both. 22.05 % suffered from Hypertension whereas 23.33 % suffered from Diabetes Mellitus and 6.41 % of the patients were suffering from both Hypertension and Diabetes Mellitus. The mean incidence of conversion is 12.3% of all operated cases. Adhesions were the most common reason for conversion at 43.75% of all conversions. Postoperative complications were noted in 36 patients out of which the most common being fever, 47% of all patients with post-operative complications equaling to 4.1% of total operated cases.

In conclusion it can be said that laparoscopic cholecystectomy conducted within 72 hours of diagnosis of acute calculus cholecystitis is significantly beneficial and it can be said that early laparoscopic cholecystectomy doesn't bear more complication rate or duration of surgery as apprehended normally.

INTRODUCTION

Due to an accumulation of experiences and advances in the technology needed for laparoscopic cholecystectomy since its genesis, laparoscopic cholecystectomy has been expanding its indications, thus becoming a gold standard surgical method of cholecystectomy, due to its advantages.[1-6] Its role and its timing in the management of acute calculus cholecystitis however remain controversial. Generally, in the first 48 to 72 hours of the onset of symptoms the tissue planes are edematous but structures are identifiable and tissue planes separate without difficulty, after 72 hours tissue become friable and separate less well, the important structures

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are less likely to be seen well and there is often more destructive bleeding.

Because of the high conversion rate of laparoscopic cholecystectomy to open cholecystectomy and the high incidence of postoperative complications, the use of laparoscopic cholecystectomy has been controversial up until recently.[7-10]

As per the 2006 Tokyo Guidelines, laparoscopic cholecystectomy is now being recommended as the first line of treatment for acute calculus cholecystitis.[11]

Laparoscopic cholecystectomy was first reported in Germany (1985) and France (1987) more than 2 decades ago [12-15]. The first laparoscopic cholecystectomy was operated by PhillipeMouret of Lyons, France, in 1987 [16]. In 1988, laparoscopic cholecystectomy was successfully accomplished by Dubos, Reddick, and Perissat, respectively [17]. Although not immediately universally adopted, laparoscopic cholecystectomy has revolutionized general surgery.

The first laparoscopic cholecystectomy in India was performed by Dr. Tempton Udwadia in 1990 at the JJ Hospital, Mumbai, followed a few months later by Dr. Jyotsna Kulkarni in Pune. [18]

MATERIALS AND METHODS

A Cross Sectional study was carried out on 390 patients diagnosed as acute calculus cholecystitis (Age > 18 years) that were admitted to surgery wards of National Institute of Medical Science and Research, Jaipur through Emergency / OPD basis during the period of one and half year (1st January 2016 – 30th June 2017).

The operation was performed by consultant surgeons, and the surgery was done with the patient under general anaesthesia using endotracheal intubation.

During surgery, when the following events occurred, the operation was converted to open cholecystectomy: adhesion, improper clipping of cystic artery, Excessive oozing from gall bladder bed not controlled by topical hemostatic agents, non-identification or difficulty in identification of common bile duct, fallous Gall bladder (Gall bladder directly opening into CBD), Mirizzi syndrome (where practically gall bladder cannot be separated from CBD) and any iatrogenic causes.

During the surgery, following complications were noted: Gall bladder perforation, common bile duct injury, right posterior sectoral duct injury or injury to intestine.

Monitoring for the following events in post-operative period was observed as follows, bile (>100 cc in 24 hours) from drainage tube, fever, post-operative jaundice, post- operative symptoms and signs of peritonitis.

RESULTS

The main aim and objective of this study was “To evaluate the role of early laparoscopic cholecystectomy in acute calculus cholecystitis.” To accomplish the objective, several observations have been derived which are summarized below:

In the study, the maximum incidence of acute calculus cholecystitis was found in the age group of 41-50 year (22.82%). The mean age was seen to be 50.73 years. There was heavy female preponderance at the ratio 2.33:1. This was further backed by a majority of patients between the ages of 41 to 50 being females at 82%, which backs the famous “Fat, forties, female” analogy associated with acute calculous cholecystitis.

Symptoms were as follows: 80.51 % had a chief complaint of pain in right hypochondrium, while 76

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patients (19.49%) presented with epigastric pain. 67.70% of the patients presented with fever. 75 Patients presented with nausea along with pain abdomen and 57 patients presented with vomiting, whereas 57 patients presented with both.22.05 % suffered from Hypertension whereas 23.33 % suffered from Diabetes Mellitus and 6.41 % of the patients were suffering from both Hypertension and Diabetes Mellitus. They constituted as a majority of the patients that underwent conversion.

The mean duration of surgery is 44.37 minutes in this study. The mean incidence of conversion is 12.3% of all operated cases. Adhesions were the most common reason for conversion at 43.75% of all conversions. This was followed by iatrogenic causes, improper clipping of the cystic artery, incidence of excessive oozing from gall bladder bed which was not controlled by topical hemostatic agents, inability to identify the junction of cystic duct and the common bile duct forcing for conversion, fallous gallbladder and Mirizzi syndrome.

Most common cause of iatrogenic conversion was common bile duct injury at 54.54% of all iatrogenic causes. This was followed by gallbladder perforation, right posterior sectoral duct injury and injury to the intestines.

Postoperative complications were noted in 36 patients out of which the most common being fever, 47% of all patients with post-operative complications equaling to 4.1% of total operated cases.

The postoperative stay of 83% of the patients was less than 3 days. Those who stayed longer were due to complications either intra-operatively or post-operatively. One mortality was reported in the study due to common bile duct injury.

CONCLUSION

In conclusion it can be said that laparoscopic cholecystectomy conducted within 72 hours of diagnosis of acute calculus cholecystitis is significantly beneficial and it can be said that early laparoscopic cholecystectomy doesn't bear more complication rate or duration of surgery as apprehended normally. The following are the factors responsible for this conclusion: mean duration of surgery is much lesser since the inception of laparoscopic cholecystectomy. Also, the rate of conversion from laparoscopic to open cholecystectomy has significantly reduced proving that laparoscopic cholecystectomy has become a more preferred mode of treatment.Out of all conversions the most common cause was adhesions, which was majorly due to history of previous surgeries but can also occur spontaneously. It is one complication where we have no control over and is bound to happen regardless of any precautions taken before hand.

Iatrogenic causes for conversion are significantly less at less than 3% of the total amount of patients operated. The highest benefit of laparoscopic cholecystectomy within 72 hours of acute calculus cholecystitis is of the decreased post-operative stay of less than 3 days in successful operations which accounted to more than 87% of all cases. Only one mortality was encountered out of the 390 operated cases, which was a difficult surgery on its own as it took the longest duration and presented with complications.

Conflict of Interest: The authors declare no conflict of interests.

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