



CONVERSIONS IN LAPAROSCOPIC CHOLECYSTECTOMY IN ACUTE VERSUS CHRONIC CHOLECYSTITIS

KEYWORDS

Acute cholecystitis, laparoscopic cholecystectomy, conversion, chronic cholecystitis, predictive factors.

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ABSTRACT *Background: Early laparoscopic cholecystectomy imposes itself as an option of choice for treatment of acute cholecystitis, while the rate of conversions to open procedure represents a key parameter for evaluating the outcome. The rate of conversions can be reduced with a prompt approach to predictive factors.*

Background

Acute cholecystitis is an inflammation of the gall bladder and it has a huge significance

in diseases of the biliary tree and gastrointestinal tract [1]. In more than 90% of patients the cause of acute cholecystitis is an obstruction of the cystic duct, mostly due to the presence of calculus or because of biliary sludge "sticking" on the neck of the gallbladder. Acute cholecystitis appears in about 20% of patients with gallbladder disorder, and 1–3% of the patients with symptomatic gallbladder

stone disease [3, 4]. It is a common reason for emergency hospitalization and it is a great load for the surgical departments. In 6.3% of patients with abdominal pain younger than 50 years, and 20.9% of patients older than 50 years, acute cholecystitis is diagnosed. Traditionally, patients were treated with urgent cholecystectomy or conservative treatment with antibiotics, which in 86% resulted in successful treatment. Before the laparoscopy era, some authors preferred early open cholecystectomy. Others believed that principles of early open cholecystectomy should be applied in the laparoscopic cholecystectomy. From the beginning of laparoscopic surgery in 1987, laparoscopic cholecystectomy has been preferred for the treatment of gallbladder stone disease and chronic cholecystitis. In that period of time, acute cholecystitis was a contraindication for laparoscopic cholecystectomy. Later experiences and published studies have shown that acute cholecystitis is not a contraindication for laparoscopic procedure. Due to the perfecting of laparoscopic techniques and urgent removal of the gallbladder, good results are gained and early laparoscopic cholecystectomy is considered the treatment of choice for acute cholecystitis. Early laparoscopic cholecystectomy is related to much easier postoperative treatment, less analgetic use, shorter hospitalization and better cosmetic effects. Many surgical departments worldwide have started using this method in the treatment of acute cholecystitis as an easy and technically safe procedure. Sometimes laparoscopic cholecystectomy is not successful because of technical difficulties and intraoperative complications. In these cases, conversion to open cholecystectomy is done. The most important parameter for the assessment of the result of laparoscopic cholecystectomy in acute cholecystitis compared to chronic, is the number of conversions from laparoscopic to open procedure. One of the main reasons for conversion in early laparoscopic cholecystectomy in acute cholecystitis is the

inflammation that hinders the view to the Calot's triangle, while the main reason in delayed laparoscopic cholecystectomy

is the adhesions. Plenty of factors, such as individual characteristics, history

of disease and technique, were investigated in order to observe their association with a greater chance for conversion from laparoscopic to open procedure. Conversion rates in acute cholecystitis in the literature range from 3.6 to 12%. According to the Cochrane data base, there are no significant differences between complication and conversion rates in laparoscopic cholecystectomy performed during the acute phase compared with laparoscopic cholecystectomy performed 6–12 weeks after the resolution of symptoms, and laparoscopic cholecystectomy in chronic cholecystitis.

Aim

The aim of this paper is to evaluate the results of laparoscopic cholecystectomy in acute

versus chronic cholecystitis through determining the conversion rate in open method as

well as to analyse some predictive factors that may impact on the decision to convert to open.

Material and methods

The research presents an analytical case control study, conducted at B.J. Medical college, Ahmedabad in period of 27 months (from January 2009 to March 2011). Two groups were included with a total of 124 patients diagnosed with cholecystitis on whom laparoscopic cholecystectomy was performed.

The first group included 62 patients with acute cholecystitis on whom the laparoscopic cholecystectomy was performed in the period from zero to the seventh day of the onset of symptoms. The second group included 62 patients with chronic cholecystitis who underwent laparoscopic cholecystectomy. All operations were performed with the patient under general anaesthesia with endotracheal intubation using either a 3- or 4-trocar technique. The selection of the respondents in the first group with acute cholecystitis was made using the method of simple random sampling. Respondents in the group with chronic cholecys-

titis were matched with those of the first group in terms of gender and age (± 3 years). The analyses of the factors that can possibly act

on conversion of laparoscopic cholecystectomy to open method were made, in which the gender and age of the patient, history of cholecystitis (acute or chronic), the time passed from the first symptoms till laparoscopic cholecystectomy and duration of the intervention were analysed.

Statistical analysis

Data entry and statistical analysis was performed using Statistics version 7 and Epi Info

version 3.4.3. Basic descriptive statistics were presented to analyse data. Categorical variables were expressed as numbers and percentage.

Some ordinary categorical variables were cross tabulated with multiple response variables dichotomies. The Chi-square test, Fisher exact two-tailed test and Yates correction were used for testing differences in conversions due to gender, age, time passed from the appearance of the first symptoms till the laparoscopic cholecystectomy and duration of the intervention. Statistical values were considered significant at P-values ≤ 0.01 and ≤ 0.05 .

Results

Sample characteristics

The sample of the study included 124 patients, 62 with acute and 62 with chronic cholecystitis who underwent laparoscopic cholecystectomy over the 27 month period. According to the analysis presented in Tables 1 and 2, the majority of the respondents was female 35 (56.4%) and belonged to the age group 55 – 64 years. There is no significant differences between the two groups due to gender or age ($p > 0.05$).

Gender	Male	Female	Total
Group with acute cholecystitis	27	35	62
Group with chronic cholecystitis	32	30	62

Conversion in open procedure

Gender	Conversion-yes	Conversion-no	Total
Group with acute cholecystitis	6	56	62
Group with chronic cholecystitis	2	60	62