



AWARENESS OF LAPAROSCOPIC CHOLECYSTECTOMY IN RURAL POPULATION

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ABSTRACT

Introduction: Laparoscopic cholecystectomy is a gold standard procedure and has largely succeeded in replacing conventional open method for treating the chronic cholecystitis and cholelithiasis because of its numerous benefits. The objective of the study is to check the feasibility of Laparoscopic Cholecystectomy in rural based patients with fixed ideas of Open Cholecystectomy being better than laparoscopic cholecystectomy.

Methodology: This prospective study was done in Department of Surgery, diagnosis was made on the basis of thorough clinical examination supported by ultrasonography, and other investigations. All patients over the age of 18 years visiting the outpatient department with symptoms of pain in right upper abdomen indicative of Cholecystitis were included in the study. Patients over 60 years of age having Cholelithiasis with choledocholithiasis, pancreatitis, liver cirrhosis and carcinoma gall bladder were excluded from the study. Patients with abnormal lab results, uncontrolled diabetes mellitus, portal hypertension, history of upper abdominal surgery, compromised cardiopulmonary status were also excluded from the study. The following aspects were collected for all patients: post-operative pain, diet, resumption of activities, duration of hospital stay, cost-effectiveness, conversion rate, and opinion based on questionnaire.

Results: A total of 125 patients underwent cholecystectomy out of which 97 underwent laparoscopic cholecystectomy and 03 had open cholecystectomy which was converted due to intraoperative complications. Hospital stay was noted to be of average 2 days with complete resumption of activities and proper bowel movements. Post cholecystectomy syndrome was seen in 03 of the patients for which symptomatic treatment was given. No mortality was observed during the study. The patients preferred laparoscopic procedure, though after proper explanation for their concerns.

Conclusion: Laparoscopic cholecystectomy is a promising modality even in rural setup. Most of the patients nowadays reporting to our institution are interested in Laparoscopic cholecystectomy.

KEYWORDS : Cholelithiasis; Cholecystitis; Post cholecystectomy syndrome; Laparoscopic cholecystectomy; Open cholecystectomy.

Introduction

Cholelithiasis refers to the presence of gallstones in gall bladder or disease caused by gallstones. More than 95% of biliary tract disease contributes cholelithiasis¹. Out of these, 75% of the people with gallstones are asymptomatic but in symptomatic cases, pain in right upper quadrant, fever, nausea, vomiting which may be associated with jaundice, is the common features¹.

A study was done to evaluate Laparoscopy surgeries in rural Nigerian population performed mainly Laparoscopic Cholecystectomy and showed that basic laparoscopic procedures could be offered safely to the resource-poor rural population. They also suggested that it was platform which could help in introduction of advanced laparoscopic surgical operations². Infact, it suggested that Laparoscopic Cholecystectomy can be offered safely to resource deficient population².

A study done in Nepal to check the feasibility of Laparoscopic Cholecystectomy in rural population concluded that it was a safe, reliable and a promising option as far as rural set up was concerned and could be recommended as a feasible standard procedure in rural set up too³. A similar study is done in rural Mongolia for expansion of laparoscopic Cholecystectomy concluded that it can be expanded safely to rural Mongolia to markedly improve access and outcomes for the 50% of the country who previously denied the benefits of minimally invasive surgery⁴. A study done in 2004, assessed outcome of Laparoscopic Cholecystectomy in patients aged 80 or over that, concluded that Laparoscopic Cholecystectomy can be performed safely with low morbidity in patients aged 80 and above⁵. Since, Laparoscopy is the gold standard procedure for symptomatic and asymptomatic Cholelithiasis, the data on awareness amongst the rural population of UP West was insufficient. Hence, this study was done to create awareness amongst the rural population who has fixed ideas of Laparoscopic Cholecystectomy being better than Open Cholecystectomy.

Methodology:

Study design: This prospective study was done in Department of Surgery, of Teerthankar Mahaveer Medical College and Research Centre, Moradabad for a time period of 6 months, from March 2017 to September 2017. 125 patients were enrolled in this study and divided into two groups, Group A consisted of patients undergoing laparoscopic cholecystectomy and Group B consisted of patients undergoing open cholecystectomy. Patients were recruited only after the written informed consent and proper counselling regarding the merits of this study. Patients of age group 18-60 visiting the department, irrespective of their gender, willing to give written informed consent and having the symptoms suggestive of Cholelithiasis, were recruited in this study. The diagnosis was made on the basis of thorough clinical examination and history; supported by ultrasonography, and other investigations. Patients over 60 years of age with choledocholithiasis, gall stone pancreatitis, liver cirrhosis and carcinoma gall bladder, abnormal lab results like increase ALP and Bilirubin, uncontrolled diabetes mellitus, portal hypertension, history of upper abdominal surgery, compromised cardiopulmonary status were excluded from the study. Parameters considered were Post-operative pain, Return to Normal Daily activities (RNDA), Duration of hospital stay, and Conversion rate. The patients were also subjected to a questionnaire to address the myths and concerns for laparoscopic cholecystectomy

Statistical Analysis: The data was tabularized as mean \pm standard deviation (SD). Results were analysed using non parametric tests (Chi-Square Test), parametric tests (unpaired student's t-test) and correlation (Pearson correlation coefficients) analysis. A $p < 0.05$ was considered statistically significant.

Results:

One hundred and twenty five patients were enrolled in the study after obtaining written informed consent. Out of 125 patients recruited, 100 patients underwent laparoscopic cholecystectomy and were kept in

group A, whereas, 25 patients underwent open cholecystectomy and were kept in Group B. Fifteen (15) % of patients were aware of laparoscopic cholecystectomy and considered it as gold standard treatment. More than half of the patients i.e. 52% were of the view that open cholecystectomy was the gold standard for treatment; it gave a better visualization; laparoscopic procedure was associated with higher complications. These patients were also of the view that laparoscopic procedure was for extraction of stone and introduction of gas during laparoscopic procedure can lead to increased problems. Few other patients (20%) were of the view that patients who underwent laparoscopic procedure were given suboptimal treatment; it was a lengthy procedure and there was greater chance of it being converted to open procedure if complication arises. Another subset of patients (12%) was of the view that laparoscopic procedure was for the extreme of ages. Proper health education and counselling helped these patients to understand the benefits and the risks (Table 1).

Conversion rate was found to be 3 % due to intraoperative complications. Patient's attendant was made aware about the complication and written informed consent was taken. The variation of pain, on the basis of Visual Analogue Scale, between the two, is shown in Figure 1. Pain on the post-operative day 0 was equivalent in both the interventions. However, it started differentiating after that. There were a significant ($p < 0.05$) more number of patients in open cholecystectomy group, with complaints of pain 24 and 48 hours after the procedure. The return to normal daily activity (RNDA) was significantly ($p < 0.05$) earlier in patients with laparoscopic cholecystectomy (7 vs. 36 hours) (Figure 2). Figure 2 also shows the dietary status of patients in both groups. Patients who underwent laparoscopic cholecystectomy were able to take food by mouth at a significantly earlier time period (6 vs. 24 hours). The duration of stay in hospital is shown in Figure 3, a significantly ($p < 0.05$) higher number of patients were discharged after 24 and 48 hours in patients who underwent laparoscopic cholecystectomy.

Discussion:

Since laparoscopic Cholecystectomy is gold standard, as a surgical intervention of cholelithiasis and cholecystitis; Open cholecystectomy is another modality of treatment which has not been obsolete. Lack of proper awareness and knowledge regarding the procedure of laparoscopic cholecystectomy had resulted in people still opting for open cholecystectomy. Therefore, we designed this study to know the myths associated with operative procedure and create awareness amongst the rural population was the prime objective of this study, who has fixed ideas of Open Cholecystectomy being better than Laparoscopic Cholecystectomy.

The results of our study demonstrated that patients who preferred laparoscopic cholecystectomy has significantly lesser pain, restored their normal activities quicker and were discharged earlier from the hospital. Our study also showed that proper counselling of patients regarding procedure of laparoscopic cholecystectomy led a higher number of patients opt for this treatment modality.

All over the world, gall stones are a major health problem. More than 15-20% of adult population is affected by it, making cholecystectomy the most common surgical procedure⁶. Cholecystectomy has not only revolutionised the surgical management of cholelithiasis, but also became the mainstay of management of uncomplicated and asymptomatic gall stone disease⁶.

The 1st open cholecystectomy was done in 1882 by Dr Carl August Langebuch⁷ and 1st Laparoscopic Cholecystectomy was done in Lyon, France by Dr. Philleppe Mouet, Dr. Qubois and Dr. Persatt⁸.

Laparoscopic cholecystectomy is the procedure of choice for the majority of patients with gall bladder disease but it may be shifted to open cholecystectomy in case of any complications during the surgical procedure. Mortality rate for cholecystectomy is <1% but in case of complications, its 10-15%⁹. No mortality was observed during this study but Post cholecystectomy syndrome was observed in 03 patients for which symptomatic treatment was given. Laparoscopic cholecystectomy is fast gaining pace as the operative procedure of choice in rural population has been aptly shown by our study. The results are quite similar to study done in various other parts of the world showing laparoscopic procedure picking up pace and serving as a modality of treatment in rural setting^{2,3,4}.

There are certain limitations in our study, firstly, the sample size is unequal, due to shortage of time period allotted as well as the specificity of inclusion and exclusion criteria. Any patient that could have created bias in this study was excluded. Secondly, the prevalence and incidence of Post Cholecystectomy syndrome amongst the group A and B was not completely evident. This study surely, has benefitted the rural population in understanding the less invasive and promising modality, thereby creating awareness.

To conclude, Firstly, Post-operative pain on VAS 0 to 10, is less in patients of group A. Secondly, the hospital stay is of lesser duration in patients with group A, thereby, economic for the patient. Thirdly, RNDA (Return to Normal Daily Activities) was much earlier in patients with group A, increasing the level of patient's self-confidence. Fourthly, as there is more than 30 % increment, more than 80 % of the patients reporting to us are now opting for Laparoscopic Cholecystectomy.

Table 1. Response of patients to the myths associated with laparoscopic cholecystectomy

S. No	Myth	Number of response (%)
1	The open surgery as compared to laparoscopic is the GOLD standard for treatment	65 (52)
2	Patients treated with laparoscopic cholecystectomy get sub optimal treatment	25 (20)
3	Open Surgery is much better as compared to Laparoscopic Cholecystectomy as surgeon can visualize better with his own eyes	65 (52)
4	The visualization in laparoscopic cholecystectomy is poor	15 (12)
5	Laparoscopic Cholecystectomy is much longer as compared to open surgery; hence the patient is at higher risk due to increased anesthesia exposure.	25 (20)
6	In case of complications with Laparoscopic Cholecystectomy like bleeding then it is converted to open surgery	25 (20)
7	Laparoscopic Cholecystectomy is associated with higher incidences of complications	65 (52)
8	Laparoscopic Cholecystectomy is very expensive	15 (12)
9	Laparoscopic Cholecystectomy is done by a robot	6 (5)
10	Laparoscopic Cholecystectomy cannot be performed in very old patients and young children	15 (12)
11	Laparoscopic Cholecystectomy takes longer time for full recovery	6 (5)
12	Laparoscopic Cholecystectomy surgery is performed with the help of lasers	13 (10)
13	Laparoscopic Cholecystectomy surgery is only used to extract stones.	65 (52)
14	Introduction of telescope can increase the danger inside the body	6 (5)
15	It is not possible to extract gall bladder from a small hole	6 (5)
16	Laparoscopic Cholecystectomy cannot be performed in obese people	6 (5)
17	Introduction of gas can lead to increased problems in the body	65 (52)
18	Laparoscopic Cholecystectomy is associated with higher rate of infections	13 (10)

Figure 1. Visual Analogue Scale Score in both Groups

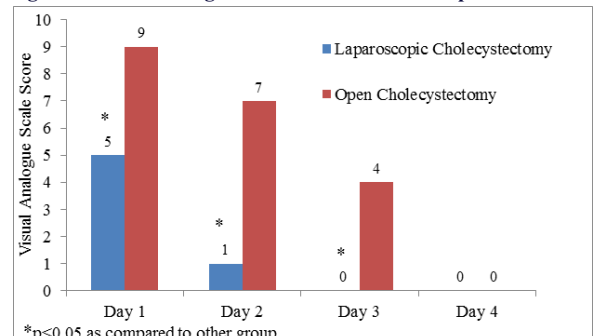


Figure 2. Return to Norma Daily activity and time to start diet in both groups

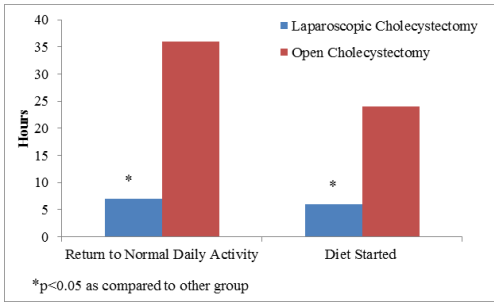
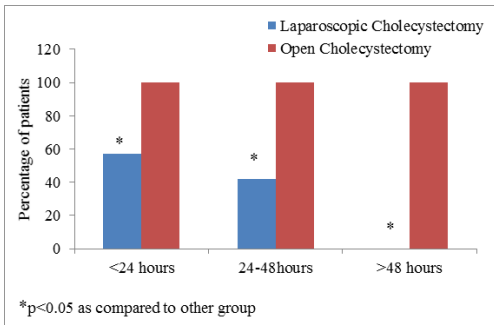


Figure 3. Duration of hospital stay in both groups



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