

A Prospective Comparative Study on Patients Quality of Life After Laparoscopic Cholecystectomy Vs Open Cholecystectomy in J.A. Group of Hospitals Gwalior (MP)

Shivam Upadhyay¹, Shashikant Arya², Sandeep Thakre³, Sunil Agarwal^{4*}

¹Senior Resident, Dept. of General Surgery, GR Medical College, Gwalior, MP

²Assistant Professor, Dept. of Medicine, CIMS, Chhindwara, MP

³Associate Professor, Dept. of General Surgery, CIMS, Chhindwara, MP

⁴Professor, Dept. of General Surgery, GR Medical College, Gwalior, MP

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Corresponding author: Dr. Sunil Agarwal

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Abstract:

Objectives: Comparing overall GIQLI (Gastrointestinal quality of life index) along with its 5 components (psychological, social, physical, disease specific, core GI symptoms) in patients who underwent laparoscopic and open cholecystectomy for cholelithiasis.

Material and Methods: The study involved a total of 150 patients which were blindly randomized into 2 equal groups of 75 patients each which underwent open and laparoscopic cholecystectomy respectively. Quality of life (QOL) was evaluated by using Gastrointestinal Life Quality Index (GIQLI), specifically designed to assess the quality of life of patients with gastrointestinal disorder. Mean values of GIQLI and its each domain were calculated for each group and then compared for significance.

Results: The mean age of patients was 38 years and 42.89 years in laparoscopic cholecystectomy and open cholecystectomy group respectively. Among the 75 patients undergoing laparoscopic cholecystectomy, 17 patients (22.67%) were male and remaining 58 patients (77.33%) were female. The mean preoperative GLQI score was 80.82 and 78.14 in the LC and OC groups respectively. The main factors affecting the quality of life were as follows: Core GI Symptoms including epigastric fullness, abdominal pain, anorexia, disturbed physical functions including reduced physical strength, fatigue, Psychological & social problems including sadness and nervousness. In addition, most of the patients had some limitation in work ability. The data were all recorded and analyzed using simple statistical tests. Significance was measured using student t test, to compare the results.

Conclusion: Laparoscopic cholecystectomy is a better surgical treatment modality which improves patient's psychological well-being, social status, disease specific symptoms, Core GI symptom & physical functioning as compared to open cholecystectomy.

Keywords: Cholelithiasis, QOL, Laparoscopic cholecystectomy, Open cholecystectomy.

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Introduction

Cholelithiasis is one of the most prevalent gastrointestinal diseases with substantial burden to health care system. Cholelithiasis is managed with three treatment options namely- open mini-incision and laparoscopic surgery. Currently, laparoscopic cholecystectomy has been extensively accepted for the treatment of cholelithiasis, but little is known about the private results and quality of life (QOL) of this surgery. Although several styles have been used to measure QOL after cholecystectomy, difficulty remains in opting meaningful parameters in order to gain reproducible data to reflect postoperative QOL. Quality of life is a multidimensional construct with several facets: emotional or cerebral wellbeing, physical

functioning, social functioning, and symptoms of the complaint and treatment. QOL assessment serves as a more complete and important tool for assessing the issues of complaint and surgical treatment. The World Health Organization (WHO) outlines one explanation of QOL as; "An existent's perception of their position in their life in the environment of the culture in which they live and in relation to their pretensions, prospects, norms and enterprises". Factors impacting the quality of life can be divided into subjective (physical and internal condition, social situation, and interpersonal relations), and objective factors (the case's general condition grounded on fresh examinations, clinical condition, emotional and

profitable status, as well as the quality and number of social connections). Measures of quality of life are increasingly used to estimate the outgrowth of surgical care. Deterioration of quality of life is a major reason why cases seek surgical care, and changes in health-related quality of life are how cases assess the effect of treatment. Disease-specific measures concentrate on a particular complaint and are useful for detecting change performing from treatment. Quality of life isn't measured directly but is generally tried by using dimension scales in the form of questionnaires. Different QOL indicators live and have been validated to determine the general private comprehensions and prospects of individualities in general, and in particular in the case of cholecystectomy, there's no clear, validated and formalized instrument for assessing QOL post operatively. Although specific, HRQOL instruments have been proposed for cholelithiasis and cholecystectomy, they've appeared with only limited reproducibility, confined operation due to verbal gaps when restated into different languages. This study were estimate and compare the QOL of cases who underwent Laparoscopic cholecystectomy (LC) and open cholecystectomy (OC) for cholelithiasis using GIQLI which is an established tool for assessing QOL issues for cases with gastrointestinal conditions.

Objectives

Comparing overall GIQLI (Gastrointestinal quality of life index) along with its 5 components (psychological, social, physical, disease specific, core GI symptoms) in patients who underwent laparoscopic and open cholecystectomy for cholelithiasis.

Material and Methods

After obtaining approval from ethics committee, the present study was conducted on 150 patients of cholelithiasis admitted in J.A. Group of Hospitals and G.R. Medical College, Gwalior (MP) during January 2020 to June 2021. Consent taking to be documented for patients presenting during the course of study.

Criteria for selection: All patients diagnosed to have cholelithiasis between the ages 20 to 65. Both sexes are included.

Exclusion criteria: Patients with cognitive impairment, severe organ disease or psychiatric disease.

Methods

Patients of cholelithiasis admitted to surgical ward will be included in the study after obtaining informed consent. A total of 150 patients will be studied which will be divided into 2 equal groups of 75 patients each which underwent open and laparoscopic cholecystectomy respectively.

Quality of life (QOL) was evaluated by using Gastrointestinal Life Quality Index (GIQLI) [1], specifically designed to assess the quality of life of patients with gastrointestinal disorder. It consists of 36 items grouped into five categories (psychological status, physical functioning, social activities, core GI symptoms, disease specific), scored on a five point Likert scale with a range from 0 (most negative) to 4 (most positive). GIQLI will be calculated preoperatively once and postoperatively between 7-10th day for each group respectively. Since scoring of all questions is based on the most positive response to most negative (0). With exception of Question number 22 & 23 the most positive response is E and most negative being A therefore LIKERT SCALE SCORING in the questionnaire will be as:

Options	Score
A	0
B	1
C	2
D	3
E	4

In Question number 22 & 23 the most positive response is A and most negative being E therefore the LIKERT SCALE SCORING in them would be as:

Options	Score
A	4
B	3
C	2
D	1
E	0

Statistics analysis: The GLQI score was expressed as mean. Comparisons of the quality of life index were tested with student t test, with P value less

than 0.05 was accepted as indicating statistical significance.

SPSS 10.0 software was used for statistics analyses. The standard GIQLI questionnaire were filled preoperatively and then at postoperative day 7-10.

Observation and results: The data were all recorded and analyzed using simple statistical tests. Significance was measured using student t test, to compare the results. Combined details of all the patients are given in the master chart separately.

Table 1: Age distribution of study group

Age in years	LC (%) n=75	OC (%) n=75
<30	21	19
31- 40	28	18
41- 50	18	14
51- 60	06	21
61- 70	02	03

The mean age of patients was 38 years and 42.89 years in laparoscopic cholecystectomy and open cholecystectomy group respectively. The majority of cases were seen in age group of 31-40 years in laparoscopic cholecystectomy while majority of cases in age group of 51-60 years were seen in open cholecystectomy group.

Preoperative GLQI scores of the patients: The mean preoperative GLQI score was 80.82 and

78.14 in the LC and OC groups respectively. The main factors affecting the quality of life were as follows: Core GI Symptoms including epigastric fullness, abdominal pain, anorexia, disturbed physical functions including reduced physical strength, fatigue, Psychological & social problems including sadness and nervousness.

In addition, most of the patients had some limitation in work ability.

Table 2: Overall GIQLI

Type of cholecystectomy	PREOP Mean	POSTOP Mean
Open	78.14	111.08
Lap	80.82	121.62

Above table shows that 1 week after the operation, the mean GLQI score of the LC group patients increased to 121.62 points, compared with preoperative GLQI score of 80.82. The mean postoperative GLQI scores of OC group patients was 111.08, increased by 32.94 points, compared with preoperative score.

Table 3: Mean values of core GI symptoms

Type of cholecystectomy	PREOP Mean	POSTOP Mean
Open	22.56	26.26
Lap	22.46	31.86

Among the 75 patients undergoing laparoscopic cholecystectomy, mean values for core GI symptoms preoperatively and post operatively was 22.46 and 31.86 respectively.

Table 4: Mean values of physical items

Type of cholecystectomy	PREOP Mean	POSTOP Mean
Open	11.54	18.72
Lap	11.22	21.94

Among the 75 patients undergoing laparoscopic cholecystectomy, mean values for physical items preoperatively and postoperatively was 11.22 and 21.94 respectively. Among the 75 patients undergoing open cholecystectomy, mean values for physical items preoperatively and postoperatively was 11.54 and 18.72 respectively.

Table 5: Mean values of psychological aspects

Type of cholecystectomy	PREOP MEAN	POSTOP MEAN
Open	12.58	22.49
Lap	12.73	26.06

Among the 75 patients undergoing laparoscopic cholecystectomy, mean values for psychological aspects preoperatively and postoperatively was 12.73 and 26.06 respectively. Among the 75 patients undergoing open cholecystectomy, mean values for psychological aspects preoperatively and postoperatively was 12.58 and 22.49 respectively.

Table 6: Mean values of social aspects

Type of cholecystectomy	PREOP Mean	POSTOP Mean
Open	4.25	9.17
Lap	4.44	10.93

Among the 75 patients undergoing laparoscopic cholecystectomy, mean values for social aspects preoperatively and postoperatively was 4.44 and 10.93 respectively. Among the 75 patients undergoing open cholecystectomy, mean values for social aspects preoperatively and postoperatively was 4.25 and 9.17 respectively.

Table 7: Mean values of disease-specific

Type of cholecystectomy	PREOP Mean	POSTOP Mean
Open	27.29	34.44
Lap	26.69	37.32

Among the 75 patients undergoing laparoscopic cholecystectomy, mean values for disease specific aspects preoperatively and postoperatively was 26.69 and 34.44 respectively. Among the 75 patients undergoing open cholecystectomy, mean values for disease specific aspects preoperatively and postoperatively was 27.29 and 34.44 respectively.

Discussion

Assessing patient's quality of life has become a major concern in the recent years. In this study QOL via GIQLI was compared between a laparoscopic and an open cholecystectomy group, before surgery and 7th to 10th day after surgery. The reason for choosing such a relatively short time period was to control and minimize the effect of time on patient's quality of life, since it could be changed with time because of factors such as medical advancements, changes in patient's knowledge and information level, usage of more utilities, and many other factors.

In our study, the mean age of the sample was 40.44 years while Chen et al[2] reported that the mean age of study was 43.03 years. Moreover, there was a prevalence of females in both the studies with 84% preponderance in our study and 64.71% in the mentioned study. Chen et al[2] reported the mean GLQI score of open cholecystectomy group to be 102 postoperatively (2 weeks after surgery) as compared to a preoperative score 110.3. Laparoscopic cholecystectomy group had a score of 109.6 postoperatively (2 weeks after surgery) as compared to the preoperative score of 112.5.

Chen et al[2] reported the scoring of physical function in GLQI score of open cholecystectomy group to be 14.9 postoperatively (2 weeks after surgery) as compared to a higher preoperative score 17.5. Laparoscopic cholecystectomy group had a higher score of 17.8 postoperatively (2 weeks after surgery) as compared to the preoperative score of 18.2. In our study, the preoperative score in open cholecystectomy was 11.54 as compared to 11.22 which was found in patients of laparoscopic cholecystectomy. Postoperatively (7th-10th days after surgery) the score was 18.72 in case of open cholecystectomy and 21.94 in case of laparoscopic cholecystectomy. Chen et al [2] reported the scoring of Symptoms domain (core & disease specific) in GLQI score of open cholecystectomy

group to be 61.1 postoperatively (2 weeks after surgery) as compared to a preoperative score 64.2.

Laparoscopic cholecystectomy group had a score of 17.8 postoperatively (2 weeks after surgery) as compared to the preoperative score of 17.5. Similarly, Ervin et al[3] also reported the mean Symptoms score (core & disease specific) of open cholecystectomy group to be 23.83 postoperatively (2 weeks after surgery) as compared to a slightly higher preoperative score of 24.93. Laparoscopic cholecystectomy group had a score of 64.37 postoperatively (2 weeks after surgery) as compared to the preoperative score of 27.76. In our study, the preoperative score in open cholecystectomy was 49.85 as compared to 49.15 which were found in patients of laparoscopic cholecystectomy.

Postoperatively (7th-10th days after surgery) the score was 60.7 in case of open cholecystectomy and 69.18 in case of laparoscopic cholecystectomy. Chen et al [2] reported the scoring of psychological function in GLQI score of open cholecystectomy group to be 16.6 postoperatively (2 weeks after surgery) as compared to a preoperative score 15.7. Laparoscopic cholecystectomy group had a score of 15.2 postoperatively (2 weeks after surgery) as compared to the preoperative score of 14.4. Similarly, Ervin et al [3] also reported the mean psychological function in GLQI score of open cholecystectomy group to be 7.13 postoperatively (2 weeks after surgery) as compared to a preoperative score of 6.57. Laparoscopic cholecystectomy group had a score of 18.46 postoperatively (2 weeks after surgery) as compared to the preoperative score of 6.30. In our study, the preoperative score in open cholecystectomy was 12.58 as compared to 12.73 which were found in patients of laparoscopic cholecystectomy.

Postoperatively (7th-10th days after surgery) the score was 22.49 in case of open cholecystectomy and 26.06 in case of laparoscopic cholecystectomy. Chen et al[2] reported the scoring of social function in GLQI score of open cholecystectomy group to be 7.6 postoperatively (2 weeks after surgery) as compared to a higher preoperative score 10.8. Laparoscopic cholecystectomy group also had a lower score of 11.1 postoperatively (2 weeks after surgery) as compared to the preoperative score of 12.3.

Similarly, Ervin et al [3] also reported the mean social function in GLQI score of open cholecystectomy group to be 1.47 postoperatively (2 weeks after surgery) as compared to a higher preoperative score of 2.08. Laparoscopic cholecystectomy group had a score of 4.88 postoperatively (2 weeks after surgery) as compared to the preoperative score of 2.17. In our study, the preoperative score in open cholecystectomy was 4.25 as compared to 4.44 which were found in patients of laparoscopic cholecystectomy. Postoperatively (7th-10th days after surgery) the score was 9.17 in case of open cholecystectomy and 10.93 in case of laparoscopic cholecystectomy.

Conclusion

We conclude that, “laparoscopic cholecystectomy is a better surgical treatment modality which improves patients psychological well-being, social status, disease specific symptoms, Core GI symptom & physical functioning as compared to open Cholecystectomy”.

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Ethical approval: The study was approved by the Institutional Ethics Committee of Gajraraja Medical College, Gwalior (MP)

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