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Assessing Patients' Quality of Life after Laparoscopic Cholecystectomy and Evaluating Long-Term Outcomes

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Abstract: A study was conducted that included 122 Iraqi patients aged between 30 and 60 years who underwent laparoscopic cholecystectomy in various hospitals. Data was acquired from filled questionnaires containing items related to the duration of complications and the level at which patients were conversant with those symptoms in relation to time periods over three consecutive years. In the study, quality of life was determined by satisfaction, which came through satisfaction through a follow-up questionnaire on surgical outcomes as well as patient contentment trends. Data from the HRQOL questionnaire was used by the researchers to recognize psychological and social factors, pain, anxiety, and depression. The study was conducted in order to improve the quality of care and increase patient satisfaction. Only eight patients who underwent a laparoscopic cholecystectomy had an incidence of complications where. We found out that laparoscopic cholecystectomy in eighty percent of cases significantly changed patients' quality of life. This underscores the importance of surgery in promoting general welfare.

Keywords:. Patients, Cholecystectomy, Complications, QOL, HRQOL.

INTRODUCTION

Laparoscopic cholecystectomy is the surgical procedure by which the gallbladder, a small reservoir for bile located near the liver, is removed. Laparoscopic cholecystectomy is one of the most common operations in general surgery. The degree of complexity of this procedure is often moderate to low, and it is considered a relatively safe procedure, requiring a short hospital stay of one or two days (Duncan, C. B., & Riall, T. S. 2012'; Heuman, D.M. *et al.*, 2015). However, this is not always the case, as the gallbladder is in close proximity to the vital and sensitive blood vessels of the liver, main bile ducts, duodenum, and pancreas. Consequently, the operation carries a risk of complications in these structures (more than 1.5% of cases), with serious lesions in 2-3 cases out of 1000. Furthermore, in some instances, the complications are discovered long after the operation (Mertens, M. C. *et al.*, 2010; Jafri, L. *et al.*, 2022; Chekan, E. *et al.*, 2013).

The occurrence of gallstones is influenced by a number of factors, including age, gender, obesity, family history, and associated diseases where. There are a number of different types of stones, which vary in shape, compactness, and composition (Seleem, M. I. *et al.*, 2011). However, cholesterol stones account for more than 85% of cases. Another term for gallstones is cholelithiasis, which is more commonly observed in females (Philip Rothman, J. *et al.*, 2017; Warchałowski, Ł. *et al.*, 2020).

The pain is similar to biliary colic but persists for more than a few hours and may last for several days. It is often accompanied by nausea, vomiting, and abdominal discomfort, with an abdominal reflex in the right hypochondrium (Lengyel, B. I. *et al.*, 2012). Currently, laparoscopic cholecystectomy is practiced as the standard of care for cholelithiasis, with surgical intervention impacting significantly on the quality of life in developed countries when gallstone disease becomes complicated (Jones, C. *et al.*, 2012). It has become clear that the evaluation of QOL is an inseparable part of decision-making in surgery. Yet, despite the fact that the numbers of these operations are large and are performed all over the world daily, the data collected on post-biliary surgery QOL is very scarce (Narodowy, F.Z. 2015; Zackria, R. and Lopez, R.A. 2020).

This indicates that the postoperative quality of life following laparoscopic operations may exhibit some improvements immediately following the procedure (Isherwood, J. *et al.*, 2019; Korolija, D. *et al.*, 2004; Shi, H. Y. *et al.*, 2008). It is important to note that the introduction of laparoscopic cholecystectomy (LC) has led to an increased incidence of bile duct trauma and severe vascular trauma (Eypasch, E. *et al.*, 1995; Dupuy, J.H. 1984).

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This paper aims to assessing patients' quality of life after laparoscopic cholecystectomy and evaluating long-term outcomes.

MATERIAL AND METHOD

Collection Data

A total of 122 cases from multiple hospitals in Iraq were included in the study, during which data on the demographic characteristics and medical histories of Iraqi patients were collected where. The study had 122 patients in the research aged between thirty and sixty years who had undergone gallbladder removal.

Study design

The research used questionnaires; one that assessed the awareness of complications following surgical offences while second one investigated information about them over the past three years. This study was conducted among patients who were between 30 and 60 years old.

The initial data pertaining to the patients comprised information on their height, age, weight, body mass index, the circumstances surrounding the injury, and the symptoms they presented.

The initial complications that occurred following surgery were included, in addition to complications that occurred after six months and a full year. Furthermore, the quality of life of the patients was evaluated using a questionnaire designed to assess the quality of the surgery and patient satisfaction over the long term.

The concept of quality of life is considered to be one of the most important psychological and social variables. This is due to the increased awareness of societal gaps and inequalities, which has led to a need for new research and indicators in medical sciences. Despite the modernity of this concept, the emergence and development of the concept can be traced back to the eighth century until the twentieth century. It is combined with several similar concepts, including well-being, satisfaction, happiness, self-realization, pleasure and other concepts that established the emergence of the term quality or quality of life in a significant manner.

In this study, patients' quality of life was evaluated using the HRQOL questionnaire, which allowed for the identification of both psychological and social characteristics, in addition to the pain that patients experienced over an extended period, anxiety, and depression.

Statistical analysis

The data was subjected to analysis using the IBM SOFT SPSS 22 program. Furthermore, the figures presented in this study were generated using the Microsoft Excel 2013 program. The data was analysed statistically in order to determine the relationship between the variables and to assess the validity of the hypotheses. In addition, logistic regression was used to identify the risk factors that affect patients in the long term.

Aim of study

This study aimed to internally evaluate Iraqi patients who underwent laparoscopic cholecystectomy, in addition to evaluating long-term complications and evaluating patient outcomes according to a quality-of-life questionnaire.

RESULTS

The table below displays the demographic and general characteristics of the patients who underwent surgery in this study. The patients were distributed according to age:
30-39: 44 patients
40-49: 50 patients
50-60: 28 patients, the arithmetic mean for the patients' BMI (mean ± SD) was 31.1 ± 3.3.

In this study, patients were distributed according to gender, and it was noted that female patients were more prevalent than males.

Symptoms that may occur include severe pain in the upper or central part of the abdomen, pain in the back, just below the shoulder blades, pain in the right shoulder, nausea, or vomiting.

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Table 1- General characteristics of patients

Variable	Details
Age	
30-39	44
40-49	50
50-60	28
BMI (Mean ±SD)	31.1±3.3
Sex	
Male	52
Female	70
Symptoms	
Dyspepsia	33
upper abdominal discomfort	29
post-prandial fullness	29
nausea	31
Outcomes	
500-900	54
1000-1400	39
>1500	29
Education	
Primary	19
Secondary	31
College	50
High	22
Comorbidities	
1	60
2	29
3	22
4	11
Type of anesthesia	
General	100
Spinal anesthesia	22

The quality of life of patients was evaluated prior to surgery in order to determine the nature of the relationship and the statistical changes that occurred. A questionnaire was distributed to patients, which revealed a decline in quality of life across all domains, as shown in Table 2.

Table 2- Results related to the quality of life of patients who underwent laparoscopic cholecystectomy according to the preoperative quality of life questionnaire.

Variable	Mean	SD
The psychological aspect	60	6.6
Social side	50	7.4
Anxiety	66	7.3
fear	61	3.9
Depression	59.3	5.3

Laparoscopic cholecystectomy is more common compared to open surgery. Although there is a difference between laparoscopic cholecystectomy and open surgery in terms of the length of stay in the hospital and the duration of recovery, both procedures give the same results in treating gallbladder problems.

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Table 3- Evaluation of surgical results to patients according to the duration of surgery, hospital stay, and intensive care, Mortality, complication rate, blood pressure results

Variable	Details
duration of surgery Mean ±SD (h)	1.43±20
hospital stay Mean ±SD (h)	10.5±4.34
intensive care, f (%)	3 (2.4)
Mortality	0 (0)
complication rate	10 (8.1)
Mean systolic blood pressure	125.96 ± 9.48
Mean arterial pressure (mmHg)	96.56 ± 6.86
Mean heart rate (min−1)	95.20 ± 11.19

Table 4- Assessment of final outcomes related to complications in patients who underwent laparoscopic cholecystectomy of 8 patients

Variable	F	P%
abdominal bleeding	3	2.4
biliary fistula	2	1.6
abdominal infection	1	0.8
bile duct injury	1	0.8
organ injury	1	0.8

A number of risk factors have been the subject of investigation. There is a lack of consensus regarding the ability to predict conversion based on knowledge of different risk factors. Some of these factors are considered predictive, while others are not. Furthermore, there is considerable diversity in the criteria used to assess each specific factor. The most common risk factor is age (2.2-3.9) with a prevalence of 3.1% and an odds ratio of 0.01, abdominal bleeding (4.1-5.2) with a prevalence of 4.7% and an odds ratio of 0.01, and biliary fistula (3.7-5.2) with a prevalence of 4.4% and an odds ratio of <0.01.

Table 5-Logistic regression assessed patients' risk factors

Parameter	OI	C	P value
Age	2.2-3.9	3.1	<0.01
Sex	1.9-2.5	2.2	0.83
Type of anesthesia	1.8-2.2	2.00	0.77
upper abdominal discomfort	3.1-4.2	3.5	<0.01
Comorbidities	2.82-3.81	3.2	<0.01
abdominal bleeding	4.1-5.2	4.7	<0.01
biliary fistula	3.7-5.2	4.4	<0.01

Table 6- QOL of patients after six months postoperative

Variable	Mean	SD
The psychological aspect	40	3.2
Social side	33.9	4.1
Anxiety	34.8	4.5
fear	49.2	2.8
Depression	41	5.6

Table 7- QOL of patients in 1 year postoperative

Variable	Mean	SD
The psychological aspect	38	3.1
Social side	29.2	3.9
Anxiety	28.9	3.8
fear	41.1	2.7
Depression	38	3.3

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Table 8- QOL of patients in second-year postoperative

Variable	Mean	SD
The psychological aspect	33	2.8
Social side	27.3	2.82
Anxiety	23	3.1
fear	28.3	2.1
Depression	23	2.44

Table 9- QOL of patients in third-year postoperative

Variable	Mean	SD
The psychological aspect	21.1	2.2
Social side	14.4	2.4
Anxiety	13.3	1.92
fear	17.1	1.8
Depression	12.2	1.4

DISCUSSION

Laparoscopic cholecystectomy is a major surgical procedure performed via laparoscopy, which is considered minimally invasive and requires only one day of hospitalization (Ware, J.E. and Sherbourne, C.D. 1992). This study examined the role of excavation in determining the occurrence of surgical complications associated with laparoscopic cholecystectomy, with an average age range of 30 to 60 years.

The preferred method for the treatment of symptomatic cholelithiasis is laparoscopic cholecystectomy (Shi, H. Y. *et al.*, 2011; Quintana, J. M. *et al.*, 2005). This procedure has numerous advantages over the conventional open cholecystectomy, including minimal invasiveness, reduced pain, a shorter hospital stay, satisfactory cosmetic results, a speedy recovery, and resumption of activities.

Laparoscopic cholecystectomy is one of the most frequently performed surgeries worldwide in general surgery. The technique has low morbidity and widely recognised advantages over minimally invasive surgery. It is a safe, effective, and reproducible procedure and should be considered the ideal surgery at the time of any cystic disease requiring removal of the gallbladder.

Nevertheless, as with any surgical procedure, complications may arise post-operatively, although these are rare and generally not serious for the patient.

Analysis of 122 patients who received laparoscopic cholecystectomy presented only 8 underwent complications, accounting for 6.5%. This percentage is similar to what has recorded by Fung et al. at Vitar Hospital, which is 8.2%.

As illustrated, 80 percent of hospital patients improved following surgery, indicating that surgery plays a role in increasing general quality of life. Thus, the pre-laparoscopic-cholecystectomy mean life quality index of 59.62 ± 6.1 increased to those noticed after operations (59.62 ± 6.3).

As illustrated, 80 percent of hospital patients improved following surgery, indicating that surgery plays a role in increasing general quality of life. Thus, the pre-cholecystectomy mean life quality index of 59.62 ± 6.1 increased to those noticed after operations (59.62 ± 6.3).

A comparison of HRQOL improvements between different time points indicated that patients' health outcomes improved significantly within six months after surgery. Furthermore, the improvement in patients' health after six months was also much greater than that observed before surgery.

CONCLUSION

In summary, intraoperative and postoperative complications related to laparoscopic cholecystectomy are distinctly specific. They are more frequent among people of old age, those who are males, and patients whose blood contains abnormal amounts of an inflammatory marker such as (white blood cells) WBCs and C-reactive Protein CRP in relation to an attack pathologically defined as acute cholecystitis.

Even though it has numerous benefits, laparoscopic cholecystectomy is still associated with numerous postoperative complications, some of which are abdominal bleeding, biliary fistulae, abdominal infections, bile duct injuries, and organ injuries.

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