

# Risk of Gastrointestinal Complications in Post Laparoscopic Cholecystectomy

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## ABSTRACT

**Background:** Post-cholecystectomy is related with a significant risk of developing gastrointestinal symptoms which affect the quality of life of patients.

**Objective:** To assess the gastrointestinal complications risks in post-cholecystectomy patients (laparoscopic).

**Study Design:** Retrospective study

**Place and Duration of Study:** Department of Surgery, Services Hospital, Lahore from 1<sup>st</sup> April 2020 to 31<sup>st</sup> March 2021.

**Methodology:** One hundred and fifty patients were enrolled. All patients under went laparoscopy for their acute or chronic cholelithiasis treatment. Patients demographic, body mass index, clinical assessment was documented. Patients were followed up for a period of six months and their gastrointestinal complains were recorded.

**Results:** There were 86 females and 64 males with a mean age 49.8±6.3 years and mean body mass index were 24.8±3.6 kg/m<sup>2</sup>. Diarrhoea and fat intolerance were main complains within 56% and 57.3% patients within three months respectively. Flatulence, fat intolerance and right upper quadrant pain was also main complains of patients.

**Conclusion:** Risk of diarrhoea, right upper quadrant pain, flatulence, and fat intolerance are noticeable as gastrointestinal complication in laparoscopic post-cholecystectomy patients.

**Keywords:** Post-cholecystectomy, Gastrointestinal complications, Diarrhoea

## INTRODUCTION

Cholelithiasis for cholecystectomy has been associated with post-operative complications. These included minor biliary or non-biliary complications as well as significant gastrointestinal complications.<sup>1-3</sup> All over the globe the laparoscopic procedure for cholecystectomy is preferred to minimize mortality chances and decrease the cost of surgery as cholecystectomy is a routine procedure worldwide.<sup>3</sup>

A study reported that 96% of all cholelithiasis surgeries are performed through laparoscopy establishing this technique as main for treating/removal of benign cases of gall stones.<sup>4-7</sup> Experimental research has highlighted the association of gall stones with induced inflammations, adhesion, abscess and peritonitis. This happens in cases where there are numerous, pigmented, infected and fragmented gall stones due to infectious bile.<sup>8</sup>

Post-cholecystectomy is a syndrome describing persisting biliary-cholic or abdominal pain in right-upper quadrant accompanied by various gastrointestinal symptomatology. These symptoms appear similar as experienced pre- cholecystectomy.<sup>9</sup> This syndrome is as result of gall bladder pathology and includes intolerance to fatty foods, nausea, anti-peristalsis, flatulence, heartburn, diarrhoea, indigestion and even jaundice.<sup>10</sup> The time when these symptoms appear vary from patient to patient.<sup>11</sup> The present study was designed to evaluate the risk of various gastrointestinal complications in post laparoscopic cholecystectomy patients. This study will be useful in understanding the management of cholelithiasis treated patients on a long-term plan without misinterpreting their syndrome with other diseases.

## PATIENTS AND METHODS

This retrospective study was conducted at Department of Surgery, Services Hospital Lahore from 1<sup>st</sup> April 2020 to 31<sup>st</sup> March 2021 and comprised 150 patients who were treated for cholelithiasis by laparoscopic cholecystectomy within early weeks of their surgery till six months post procedure. All surgeries were performed by highly professional surgical team of laparoscopic surgeons who used multiport procedure during laparoscopy. Technical problems as were scored of 1 as present or 0 as absent for following five operative stages: accessing the peritoneal canal, adhesion

dissection from gall bladder, calot triangle dissection, gall bladder bed dissection, gall bladder extraction from abdominal cavity.<sup>12</sup> Specimens were histopathological analyzed. Those patients who suffered from any other hepatic disease or had malignant findings at post laparoscopy were excluded from the study. The demographic information, BMI, age, gender and clinical presentation were documented. Patients' blood tests was run though withdrawing 5cc blood for analyzing liver function test, H pylori, celiac disease, C-reactive proteins, ESR, stool smear test for, Anti-HCV, HbsAg and ultrasound as for confirming gastrointestinal symptoms related with post cholecystectomy and were not due to any other related disease. Data was analyzed by independent t test and Chi-square through SPSS version 24.0. P value <0.05 was taken as significant.

## RESULTS

There were 86 females such as 57.3% while there were 64 males (42.6%) in this study. The mean age was 49.8±6.3 years (Table 1).

The BMI of all the patients ranged from 19 to 31 kg/m<sup>2</sup> with the mean BMI as 24.8±3.6 kg/m<sup>2</sup>. There were 15 patients whose stone have moved into the common bile duct (CBD) and went under ERCP procedure pre- laparoscopy. Comorbidities like diabetes, hypertension and chronic kidney disease were seen in 19 patients (Table 2).

Among 150 patients, three months and six months follow-up was conducted which showed that right upper quadrant (RUQ) pain was complained by 6% patients within three months while 9% patients came with RUQ within six months. Diarrhoea and fat intolerance were main complains within 56% and 57.3% patients within three months respectively. The complain of diarrhoea decreased as 33.3% in six months follow-up but fat intolerance complain increased with time up 60.6% (Table 3).

Table 1: Demographic information of the patients (n=150)

Variable	No.	%
Age (years)	49.8±6.3	
Gender		
Male	64	42.6
Female	86	57.4

The present study also found that there were 60 patients

who showed high symptoms and included majority with perforated gall bladder, co-morbidities or CBD stones (Fig. 1).

Table 2: Clinical characteristics of patients

Variable	Value
BMI(kg/m <sup>2</sup> )	24.8±3.6
ERCP stone removal	15 (10%)
Comorbidities	19 (12.6%)
Difficulty score	0.71±1.2
Acute:Chronic	21:129
Post-op. Rowachol treatment	72(48)

Table 2: Symptom post-laparoscopic cholecystectomy three and six months analysis

Symptoms PLC	At 3 months	At 6 months	P value
RUQ pain	9 (6%)	12 (8%)	0.12
Diarrhoea	84 (56%)	50 (33.3%)	0.05
Constipation	53 (35.3%)	20 (13.3%)	0.045
Fat intolerance	86 (57.3%)	91 (60.6%)	0.06
Heart burn	16 (10.6%)	10 (6.6%)	0.9
Flatulence	25 (16.6%)	57 (37.3%)	0.047

PLC: Post-laparoscopic cholecystectomy, RUQ: Right upper quadrant

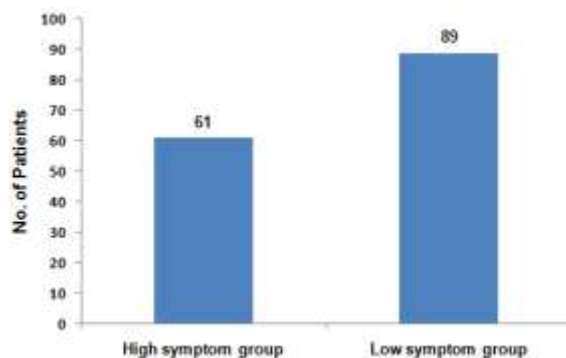


Fig. 1: Comparison of high and low symptoms

## DISCUSSION

Post-cholecystectomy patients are reported to have abdominal pain complains with multiple symptoms. These patients are treated by managing only a single symptom which has no change in their quality of life.<sup>13</sup> Understanding the synergy of symptoms is most important in developing affective treatment plan for those patients with high symptoms complains<sup>14</sup>. In present study the most commonly reported complains were right upper quadrant pain, diarrhoea and in long term patients as fat intolerance. The gastro intestinal complain of flatulence also increased with time from laparoscopic post cholecystectomy. Many studies have shown similar results as present study reports.<sup>15-19</sup>

Rowachol is a drug which has shown to be benefiting for pain management in post cholecystectomy. The current study also included 48% those patients who were given Rowachol. In patients where the drug was not administered and where it was administered; both have such cases where either pain or no pain was accompanied with diarrhoea.<sup>20</sup>

This clearly suggests that surgeons should not only monitor pain but also diarrhea symptoms in post laparoscopic cholecystectomy cases. The development of chronic diarrhea is a well-known complication of post-cholecystectomy. The main reason behind this could be malabsorption of bile acids. Altered bile-flow could also contribute towards chronic diarrhea. Flatulence can also be due to similar reasons.<sup>21</sup> Gall bladder removal can cause continual enterohepatic-cycling which further leads into increased bile acids and their spillage from ileum inside the colon.<sup>20</sup> Extreme concentration of bile acids results in diarrhea and flatulence.<sup>22</sup>

## CONCLUSION

Diarrhoea, fat intolerance and flatulence and right upper quadrant pain are the main gastrointestinal complication and risks which are presented in post-laparoscopic cholecystectomy patients.

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