

**Cholelithiasis: persistent and new symptoms post cholecystectomy**Siddharth Singh<sup>1</sup>, Yuktेशwar Mishra<sup>2</sup>, Vivek Singh<sup>3\*</sup><sup>1</sup>Associate Professor, Department of Surgery, G.S.V.M. Medical College, Kanpur, U.P., India<sup>2</sup>Assistant. Professor, Department of Surgery, G.S.V.M. Medical College, Kanpur, U.P., India<sup>3</sup>JR-3, Department of Surgery, G.S.V.M. Medical College, Kanpur, U.P., India

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**ABSTRACT**

**Background:** A Significant proportion of individuals undergoing cholecystectomy for symptomatic cholelithiasis persist with symptoms even after surgery This study focuses on the specificity of symptoms in relation to gall stone disease improvement of symptoms after cholecystectomy, persistence of symptoms & if there is development of any new symptoms. **Material & Method:** 90 patients with diagnosis of symptomatic gall stone disease undergoing elective cholecystectomy were followed through detailed history for assessment of symptoms. Same set of questionnaire (scale) as well as psychometric analysis were used both pre-operative & post operative period of 1, 3 & 6 month. 10 patients refused to participate so 80 patients were followed up. **Results:** The mean age (mean  $\pm$  S.D.) of the patient was  $43.50 \pm 10.9$  with range of 19 to 70 years ratio of male to female was approximately 1 : 2.5 . 20 patient were under went open cholecystectomy because of all associated co-morbidities. 6 patient were converted to open Cholecystectomy because of adhesion & unclear anatomy Upper abdominal pain (88.8%) fatty food intolerance (82.6%) and nausea & vomiting (72.5%) improved significantly after 6 months ( $P < 0.01$ ) however no significant improvement was observed for dyspepsia (75%). **Conclusion :** Upper abdominal pain, fatty food intolerance and nausea & vomiting together can be considered as the symptoms specific to gall stone disease these are the symptoms which improve significantly after cholecystectomy . Symptoms of dyspepsia heartburn, regurgitation , abdominal bloating & flatulence are not likely to improve significantly after cholecystectomy though there can be decreases in severity , so patient with more dyspeptic symptoms should be explained about the persistence of symptoms before taking them up for cholecystectomy .

**Keywords:** cholilithiasis, cholecystectomy, abdominal pain, persistence

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**INTRODUCTION**

Cholelithiasis is the most common disease of the biliary tract, and it is estimated that nearly up to 10%–15% of the adult population in developed countries have gallstones.<sup>[1-3]</sup> A Significant proportion of individuals undergoing cholecystectomy for symptomatic cholelithiasis persist with symptoms even after surgery Cholecystectomy is the preferred treatment option for symptomatic cholelithiasis.<sup>[4]</sup>

Despite the high number of cholecystectomies performed worldwide the approach does not seem to be 100% curative in all the patients as there may be persistence of symptoms or appearance of new symptoms after cholecystectomy.<sup>[5,6]</sup>

To reduce the number of patients with persistent or new symptoms, more evidence of the exact relationship between cholelithiasis and symptoms is needed. It is also necessary to know the type of new symptoms that patients develop so that patients can be informed before the procedure. Post cholecystectomy symptoms is distressing to a patient who, even after having undergone a 'successful cholecystectomy', needs to be investigated thoroughly once again to look for any cause of symptoms which may be related to (i) the diagnosis (overlooked stones or neoplasm), (ii)

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operative procedure (stricture, cystic duct remnant, adhesion or injury to common bile [CBD]), (iii) functional disorders affecting the sphincter of Oddi or (iv) diseases of the surrounding organ.<sup>[7]</sup> The common presenting symptoms are dyspepsia and pain<sup>[8-10]</sup> but there is very little in the literature to suggest anything about their origin<sup>[11]</sup>. PCS can occur early (occurring in the post-operative period) or late (after months or weeks) and includes a large number of disorders; both, biliary and non-biliary diseases in almost equal incidence.<sup>[12,13]</sup> The most common reported biliary cause of PCS is ductal calculi<sup>[14]</sup> and the most common reported non-biliary cause is gastric/duodenal ulcer. Early and severe symptoms are usually considered to represent a complication of cholecystectomy. Any patient presenting with PCS needs symptomatic treatment, and a detailed workup to diagnose the exact cause of symptoms; liver functions and abdominal ultrasound are usually the first line of tests that are ordered, and further investigations tailored accordingly. In this study pre-operative symptoms are compared with the post-operative symptoms to know the degree of improvement after cholecystectomy and determine the symptoms pertaining to gall stone disease.

## MATERIALS AND METHODS

Ninety patients with diagnosis of symptomatic gall stone underwent elective cholecystectomy were followed through detailed history & clinical examination for assessment of symptoms same set of questionnaire (scale) as well as psychometric analysis were used in pre-operative & post operative period of 1, 3 & 6 month. 10 patients refused to participate so 80 patients were followed up data were prospectively maintained for 80 patients who underwent elective cholecystectomy in our department, with

### Inclusion criteria

1. Symptomatic patient of gall stone disease confirmed by USG.

### Exclusion Criteria

1. Patients with proven CBD stone or any other CBD pathology.
2. Patients with any other associated medical or surgical illness.

### Methods

1. The preoperative symptoms that were assessed in this study in relation to clinical outcome were biliary colic, non-colicky pain, abdominal bloating, nausea, vomiting, dyspepsia, fatty food intolerance, and flatulence.
2. Selection of patients was based on inclusion and exclusion criteria.

3. Every patient underwent through a detailed history with special emphasis on onset, duration, severity of symptoms, association with fatty foods and history of jaundice and thorough clinical examination, emphasizing on tenderness over right hypochondrium and epigastrium, gall bladder palpability, liver palpability and examination to exclude any other abdominal pathology
4. Every patient was undertaken for appropriate set of investigations.
5. Follow up was done for a period of 6 months.
  - a) For measurement of pain Brief pain inventory [short form] questionnaire was used where a set of nine questions were asked and patients were divided into 3 groups based on the score of 0 for minimum pain and 10 for maximum pain.
    - Mild group → (0 – 4)
    - Moderate group → (5 – 7)
    - Severe group → (8 – 10)
 The same set of questions were asked in the postoperative period at 1, 3 and 6 months interval and preoperative values were compared with the postoperative values.
  - b) Nausea Assessment Score was used for measurement of nausea and vomiting as a standard and scored the maximum value as 10 and minimum value as 0. Both preoperative and postoperative values were measured and the result was analysed by standard statistical method. We have divided the patient in 3 groups.
    - Mild (value 0 – 4)
    - Moderate (value 5 – 7)
    - Severe (8 – 10)
  - c) All patients presented with some degree of fatty food intolerance ranging from mild to severe. In this study all the patients were given a questionnaire and based on the answers were divided into 3 groups.
    - Mild → (0 -4)
    - Moderate → (5 – 7)
    - Severe → (8 – 10)
 The preoperative values obtained were compared with the post operative values obtained by using same scales at 1,3, and 6 months interval.
  - d) Leeds dyspepsia questionnaire (short form) was used for measurement of dyspepsia and heartburn as a standard and scored the maximum value as 16 and minimum value as 0. Both preoperative and postoperative values were measured and the result was analysed by standard statistical method. We have divided the patient in 3 groups.
    - Mild (value 0 – 8)
    - Moderate (value 9 – 12)

Severe (13 – 16)

- e) Only 18 patients had abdominal bloating and 26 patients had flatulence at initial presentation in this study, All the patients were given a questionnaire and based on the answer subjective assessment was done with regards to persistence and improvement of symptoms at 1,3 and 6 months interval. Symptoms were recorded on post-operative follow-up, and analysed each time against various parameters such as patient's age, sex, BMI, pre-operative duration of symptoms, pre-operative emergency admissions (for acute cholecystitis), presence of comorbidities, previous abdominal surgery, pre-operatively elevated alkaline phosphatase, pre-operative ultrasound findings (number of calculi and CBD size), type of surgery performed (successful LC or conversion) and duration of surgery. Data collected from the study were analysed using Chi-square test, Student's t-test and Mann-Whitney U test. The value of significance was taken as  $P < 0.05$ .

## RESULTS

Of the total of 80 patients, there were 24 male and 56 female patients, giving a male-to-female ratio of approximately 1:2.5. The average age was 42 years (range: 12–70 years). 58 patients had multiple gallstone and 22 patients had single Gallstone. The mean upper abdominal pain score at post-operative 1<sup>st</sup> month, 3<sup>rd</sup> month and 6<sup>th</sup> month significantly decreased as compared to pre-operative mean upper abdominal pain score ( $p < 0.01$ ). Though the pain score decreased over time no significant difference was found between mean upper abdominal pain score at post-operative 1<sup>st</sup> month, 3<sup>rd</sup> month and 6<sup>th</sup> month ( $p > 0.05$ ). The mean fatty food intolerance score at post-operative 1<sup>st</sup> month, 3<sup>rd</sup> month and 6<sup>th</sup> month significantly decreased as compared to pre-operative mean fatty food intolerance score ( $p < 0.01$ ). Though the fatty food intolerance score decreased over time no significant difference was found between mean fatty food intolerance score at post-operative 1<sup>st</sup> month, 3<sup>rd</sup> month and 6<sup>th</sup> month ( $p > 0.05$ ). The mean dyspepsia score at post-operative 1<sup>st</sup> month, 3<sup>rd</sup> month and 6<sup>th</sup> month significantly decreased in few patients (25%) compared to pre-operative mean dyspepsia score ( $p < 0.01$ ). Though the dyspepsia score decreased in those patients over time no significant difference was found between mean dyspepsia score at post-operative 1<sup>st</sup> month, 3<sup>rd</sup> month and 6<sup>th</sup> month ( $p > 0.05$ ). The mean nausea and vomiting score at post-operative 1<sup>st</sup> month, 3<sup>rd</sup> month and 6<sup>th</sup> month significantly decreased as compared to pre-operative mean nausea and vomiting score ( $p < 0.01$ ). In

overall the mean nausea and vomiting score lowest at post operative 6<sup>th</sup> month ( $p < 0.05$ ). No significant difference was found in mean nausea and vomiting score between post-operative 1<sup>st</sup> month and 3<sup>rd</sup> month ( $p > 0.05$ ). Test of proportion showed that upper abdominal pain (88.8%), Fatty food intolerance (82.6%) and nausea & vomiting (72.5%) improved significantly after 06 months ( $p < 0.01$ ). However, no significant improvement was observed for dyspepsia in >70% patients. Bloating was present in 18 patients and persisted in 13 patients and was improved in 5 patients. Flatulence was present in 26 patients at the time of initial presentation. It persisted after operation in 18 patients and improved in 8 patients and arise de novo in 6 patients. Diarrhoea was not seen in any patient preoperatively, postoperatively it appeared in 2 patients. Two patients complaint of diarrhoea and 6 patients complaint of flatulence developing after cholecystectomy which was similar to study by lamberts et al. Improvement of symptoms was found independent of type of surgery (open or lap cholecystectomy)

## CONCLUSION

Upper abdominal pain, fatty food intolerance and nausea and vomiting together can be considered as the symptoms specific to gall stone disease. These are the symptoms which improve significantly after cholecystectomy, symptoms of dyspepsia, heartburn, regurgitation, abdominal bloating and flatulence are not likely to improve significantly after cholecystectomy though there can be decrease in severity. So patients with more dyspeptic symptoms should be explained about the persistence of symptoms before taking them up for cholecystectomy. Diarrhoea and flatulence are the de novo symptoms seen in patients after cholecystectomy in our study, though further studies are required.

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