



## POST CHOLECYSTECTOMY SYNDROME AFTER LAPAROSCOPIC CHOLECYSTECTOMY- A PROSPECTIVE STUDY

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### ABSTRACT

Post cholecystectomy syndrome has been used to signify the heterogeneous group of disorders affecting patients who continue to complain of symptoms after cholecystectomy. It is not really a syndrome and the term is confusing. Today it has become a melting pot of various postoperative syndromes of mostly obscure origin. In about half the cases treated by cholecystectomy, cholecystectomy leaves certain problems of digestive dysfunction (dyspeptic-pain syndrome) unresolved. This study was done to study Symptoms of postcholecystectomy syndrome in patients after laparoscopic cholecystectomy and to find the proportion of patients get cured of the pre operative symptoms after surgery. Patients admitted in surgical wards of Government Medical College Trivandrum for laparoscopic cholecystectomy for a period of one year were enrolled into the study. The mean age of the patients was 42.8 years. There were 23 females and 9 male giving a ratio 1: 2.5. The most common symptoms preoperatively were abdominal pain, pain related to food intake, nausea, dyspepsia, and vomiting. Symptom of dyspepsia, abdominal bloating and increased flatulence were present in only half the patients. In all, none of the patients suffered from jaundice. All the preoperative symptoms were significantly improved after laparoscopic cholecystectomy. 23 patients had complete absence of symptoms postoperatively. The most common symptoms post operatively were pain related to food, abdominal pain, nausea and bloating. There were no new symptoms developed after laparoscopic cholecystectomy.

**KEYWORDS** :- post cholecystectomy syndrome, laparoscopic cholecystectomy

### Introduction

Laparoscopic cholecystectomy is the standard treatment for symptomatic gall stone disease<sup>1</sup>. This study aimed to assess the effect of the operation on patients' symptoms.

Since its introduction by Eric Muhe in 1987, laparoscopic cholecystectomy has rapidly gained in popularity and is now considered the treatment of choice for symptomatic gallstone disease. The advantages over laparoscopic cholecystectomy include reduced postoperative hospitalization, reduced pain and morbidity, better cosmesis and considerable financial savings.

Gallstones are associated with a wide variety of symptoms. These include abdominal pain, pain related to fatty foods, nausea and vomiting as well as dyspepsia,

abdominal bloating and increased flatulence<sup>2</sup>. A few patients continue to have gastrointestinal symptoms after laparoscopic cholecystectomy. The term 'postcholecystectomy syndrome' has been used to describe this condition although the term 'persistent postcholecystectomy symptoms' is a more accurate description<sup>3</sup>. The reported incidence of persistent symptoms after cholecystectomy varies widely. Studies on the symptomatic outcome after laparoscopic cholecystectomy have reported successful relief of symptoms in 70% to 95% of patients but the characteristics of patients who continue to experience pain after surgery is poorly defined<sup>4</sup>. In 1947, Womack and Crider first described PCS, defining it as the presence of symptoms after cholecystectomy. These symptoms may actually represent either

(1) the continuation of symptoms that had been interpreted as resulting from pathology of the gallbladder or

(2) the development of new symptoms that might normally be attributed to the gallbladder.

The usual and most common cause of PCS is incorrect preoperative diagnosis.

PCS is also the development of symptoms, such as gastritis and diarrhea, caused by removal of the gallbladder<sup>3</sup>. It is thought to be the cause of PCS in patients with mild gastro duodenal symptoms or diarrhea. Removal of the reservoir function of the gallbladder alters bile flow and the enterohepatic circulation of bile<sup>5</sup>.

Absence of the gallbladder, on its own, i.e., cholecystectomy per se has not been reported to impair intestinal digestion or absorption. As a matter of fact there is a congenital anomaly known as agenesis of the gallbladder and cystic duct which does occur, although uncommonly, and patients with this anomaly have not been reported to suffer any digestive or absorption problems. It is a well known fact that the gallbladder acts as a volume reservoir, collecting the bile produced by the liver and releasing it when required, i.e. after a meal. Functional consequences related to this property are rare following cholecystectomy because the loss of the gallbladder is compensated for by the biliary tree which has been shown to be dilated following cholecystectomy.

Gallstone patients have a higher tendency to duodenogastric reflux of bile acid. This tendency is further increased by removal of a functioning gallbladder (but not a nonfunctioning gallbladder). The overall incidence of positive endoscopic and histopathologic changes in stomach of cholecystectomized patients is 20-30% especially significant is the atrophic type of gastritis. With the passage of time following cholecystectomy, manifestations of chronic duodenal obstruction become advanced. This results in an increase in the incidence of gastroduodenal reflux and decreased acid forming function of the stomach.

Only 30% of patients with gallstones come to surgery<sup>6</sup>, which means that asymptomatic gallstones are common. Chronic cholecystitis, the commonest indication for cholecystectomy, it is found that the only symptom entirely characteristic of chronic cholecystitis is biliary colic<sup>11</sup>. If all patients with gallstones are operated on, we will surely end up with a high incidence of PCS. Those with no symptoms at all may complain of symptoms related to the operation or its complications and those with symptoms of other systems will continue to complain of their initial symptoms

and all will be considered PCS.

ERCP manometry is recommended in postcholecystectomy patients with unexplained abdominal pain of pancreaticobiliary origin . Some have shown that patients with PCS have hypertonic dyskinesia of the sphincter of Oddi, i.e. deep and wide waves superimposed on high basal pressures of the sphincter. Endoscopic manometry at the sphincter of Oddi enabled many of the unclarified postcholecystectomy symptoms to be identified. In up to 30% of cases of PCS, functional disturbances of the sphincter are responsible for the clinical picture . While others insist that patients with sphincter of Oddi dysfunction have no greater pressure rise in the CBD after morphine than do asymptomatic cholecystectomized controls and a given rise in pressure might precipitate pain in a patient with sphincter of Oddi dysfunction but not in a normal control subject which means that these patients might have a greater pain sensitivity to a given rise in pressure in the CBD .

Treatment of this condition is a controversial area with lack of definitive evidence for cure by any form of treatment. Medical treatment includes cisapride, ursodeoxy cholic acid, sublingual nitroglycerine, nifedipine, endoscopic sphincterotomy and sphincteroplasty.

**Aims of the study**

**PRIMARY:**

1. To study Symptoms of postcholecystectomy syndrome in patients after laparoscopic cholecystectomy .

2. To find the proportion of patients get cured of the pre operative symptoms after surgery.

**SECONDARY**

To study the duration of each symptoms following laparoscopic cholecystectomy.

**Methodology**

Research design: Hospital based Prospective cohort study  
Study setting:

Department of General surgery Government medical college, Thiruvananthapuram

**Study population :**

Patients admitted in surgical wards for laparoscopic cholecystectomy Study period : 12 months after getting clearance from the Ethical committee

**Inclusion criteria:**

All patients admitted in general surgery ward for laparoscopic cholecystectomy

**Exclusion criteria :**

Patients not giving consent  
Patient Undergoing open cholecystectomy

**Study Tools :**

Structured proforma  
Informed consent

**Study Procedure :**

Patients fulfilling the inclusion criteria were enrolled into the study and evaluation and recording in a preformed proforma of the following were done after getting a written informed consent.

**Statistical analysis :**

1. Qualitative data was analysed using proportions
2. Quantitative data was analysed using mean, median and standard deviation Statistical methods applied :

1. McNemarChi – square test

2. Paired T- test

Sample size

Sample size was calculated using the formula

$$N = \frac{(Z_{\alpha/2} + Z_{1-\beta})^2 [P_1(100-P_1) + P_2(100-P_2)]}{(P_1 - P_2)^2}$$

(P1 - P2)<sup>2</sup>

P1= proportion of patients having the symptoms pre operatively

P2 = proportion of patients having the same symptom post operatively

$$(Z_{\alpha/2} + Z_{1-\beta})^2 = 7.9, \text{ if } \alpha = 0.05$$

$$\beta = 0.2$$

The symptom with least prevalence is taken, to get maximum sample size.

The study 'Postcholecystectomy Syndrome After Laparoscopic Cholecystectomy' by M Akthar Quresi et al conducted among 100 cases of patients underwent laparoscopic cholecystectomy showed the symptom with least prevalence was flatulence . Proportion of patients who had flatulence pre-operatively ( P1 ) was 39 and proportion of patients who had the same symptom post operatively ( P2 ) was 10.

Using these values in the formula Sample size, N = 31

**VARIABLES STUDIED**

1. Age
2. Sex
3. History of addictions (smoking, alcoholism, iv abuser)
4. Any other comorbidities present
5. History of previous surgery
6. Treatment history, intake of oral contraceptive pills
7. Vital signs

**Results**

All the patients contacted agreed to participate in the study. The mean age of the patients was 42.8 years. There were 23 females and 9 male giving a ratio 1: 2.5.

The results in the table no:1 summarize the pre and post operative symptoms of 32 patients in the study.

The most common symptoms preoperatively were abdominal pain, pain related to food intake, nausea, dyspepsia, and vomiting.

Symptom of dyspepsia, abdominal bloating and increased flatulence were present in only half the patients.

In all, none of the patients suffered from jaundice. All the preoperative symptoms were significantly improved after laparoscopic cholecystectomy. 23 patients had complete absence of symptoms postoperatively. The most common symptoms post operatively were pain related to food, abdominal pain, nausea and bloating.

There were no new symptoms developed after laparoscopic cholecystectomy.

Gallbladder specimen examination:  
Histology of the gallbladder showed that 85% had chronic and 10% sub acute inflammation while 5% were normal. Bacteriology was not done. Stone type was not examined.

Symptoms	Improvement after 6weeks
Abdominal pain	87.96%
Pain on food intake	91.93%
Nausea	92.25%
Vomiting	100%
Dyspepsia	100%

Bloating	93.39%
flatulence	100%
Jaundice	100%
Fever	100%
Rigor	100%

**TABLE:1 IMPROVEMENT OF SYMPTOMS AFTER 6 WEEKS****Discussion**

The result of this analysis demonstrate that laparoscopic cholecystectomy is an effective treatment for symptomatic gall stone disease , 78.1% of patients were completely free of symptoms after laparoscopic cholecystectomy. Of the 22% patients who had persistence of symptoms only few had one symptom which did not interfere with their lifestyle. Thus 85% of patients had good outcome after laparoscopic cholecystectomy in this study.

The symptoms described by the patients with gall stones also occur in a number of other conditions such as peptic ulcer, reflux oesophagitis, pancreatitis and irritable bowel syndrome. Thus it may be difficult to attribute the patients symptoms conclusively to gall stone and persistence of symptoms has been documented in 30% to 50% of patients after classical cholecystectomy is followed by a persistence of symptoms in a similar manner.

Removal of gall bladder is associated with several physiological change in the upper gastrointestinal tract which may account for the persistence of symptoms or the development of new symptoms after cholecystectomy. The cholecystosphincter of oddi reflex ,cholecystoantral reflex and cholecysto-oesophageal reflex are all disrupted and a number of local upper gastrointestinal hormonal changes also occur after cholecystectomy. Thus there is an increased incidence of gastritis,alkaline guodenogastric reflux and gastro esophageal reflux after cholecystectomy.

In all, patients who continued to have at least two symptoms postoperatively and this correlates with patient satisfaction with the procedure. Most patients returned to full activity within 6 weeks: however this did not correlate with number of postoperative symptoms.

Histology of the gallbladder showed that 85% had chronic and 10% subacute inflammation while 5% were normal. Bacteriology was not done. Stone type was not examined.

**Conclusion**

Laparoscopic cholecystectomy is an effective treatment for symptomatic gall stone disease. 85% of patients had good outcome after laparoscopic cholecystectomy in this study. Most patients returned to full activity within 6 weeks.

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