MAK HILL Publications Research Journal of Medical Sciences

Research Article
doi: 10.59218/makrjms.2023.147.151

Post-Cholecystectomy Syndrome: After Laparoscopic Cholecystectomy

T. Arun Kumar
Department of General Surgery, VELS Medical College and Hospital, India

ABSTRACT
PCS is frequently an exclusion diagnosis, thus it should be taken into consideration in light of the condition that an adequate workup has revealed. It often increases when the function of the reservoir declines, which causes alterations in bile flow. Our research helps determine the percentage of patients who experience specific symptom profiles after laparoscopic cholecystectomy. When admitted to the hospital for an acute emergency related to gallstones between January 2022 and June 2023, 75 individuals were examined for laparoscopic cholecystectomy. In order to confirm the diagnosis of cholelithiasis, USG was performed on each patient. A common questionnaire looked at colonic symptoms, dyspepsia and pain features. Patients received proforma before the operation and six to twelve months later. Patients are followed up with over the phone or in person as needed. Sixty Four patients who had a laparoscopic cholecystectomy. For uncomplicated symptomatic gallbladder disease, thirty female and twelve male patients received surgery. Twelve males and ten females underwent the difficult illness procedure. Eight men and seven women suffered acute cholecystitis. Two males and three females had calculi in their common bile ducts. The pancreatitis of two men was made worse by CBD calculi. Following surgery, ERCP was performed on this patient. This study's 13% post-cholecystectomy incidence rate. Upper GI complaints exhibited cure rates of around 80%, suggesting certain upper GI symptoms may be caused by biliary disease that can be resolved by cholecystectomy in two patients with persistent upper GI symptoms. These two patients were discovered to have duodenal ulcers.

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Key Words
Post-cholecystectomy, laparoscopic, syndrome, gallbladder disease, cholecystitis

Corresponding Author
T. Arun Kumar
Department of General Surgery, VELS Medical College and Hospital, India

Received: 3 June 2023
Accepted: 17 June 2023
Published: 27 June 2023

Citation: T. Arun Kumar, 2023. Post-Cholecystectomy Syndrome: After Laparoscopic Cholecystectomy. Res. J. Med. Sci., 17: 147-151, doi: 10.59218/makrjms.2023.147.151

INTRODUCTION

Post-cholecystectomy syndrome (PCS) is the failure of the operation to relieve the preoperative symptoms. These symptoms may just be the continuation of current or recent ones[1]. The absence of the gallbladder following surgical removal may also contribute to post-cholecystectomy syndrome (e.g., gastritis and diarrhea). PCS is typically an exclusion diagnosis and should be taken into consideration in relation to the disease discovered by a thorough workup. It increases when the function of the reservoir declines, causing bile flow to shift.

There can be two different kinds of issues. One, there is a constant overflow of bile into the upper GI tract, which can cause gastritis and gastro esophageal reflux disease by producing gastric and esophageal irritation. The second is brought on by the lower GI tract, which can also cause loose stools and colicky lower abdominal pain.

Muhe developed laparoscopic cholecystectomy in the year 1986[2]. According to many publications from the late 1980s, the development of minimally invasive methods like laparoscopy and its transformation into a day surgery in some locations led to an increase in cholecystectomy rates of about 22%. Cholecystectomy benefits the majority of symptomatic patients, therefore even slight modifications in the justifications for gall bladder removal procedures have a significant influence on health care expenditures.

Since there is no association between prevalence and gall bladder removal surgery rates, it is well recognized that a variety of causes also affect these rates. The frequency of gall bladder operations depends on the institution, the severity of the protocol and the attitude of the surgeon. In general, cholecystectomy is a well-known, effective procedure that completely relieves preoperative symptoms in more than 90% of patients.

Aims and objectives: Our research helped determine the percentage of individuals who experienced specific symptom profiles following laparoscopic cholecystectomy as well.

MATERIALS AND METHODS

Between January 2022 and June 2023, 75 patients had evaluations for laparoscopic cholecystectomy. All of them had laparoscopic cholecystectomy surgery either scheduled or performed urgently after being admitted to the hospital for a gallstone emergency. In order to confirm the diagnosis of cholelithiasis, USG was performed on each patient. If a patient received an open operation or was unable to complete the proforma, they were excluded from the research. Investigations performed in preparation for a cholecystectomy were obtained.

Inclusion criteria:

- After an appropriate evaluation or an emergency situation for acute issues connected to gallstones, the patient underwent an elective laparoscopic cholecystectomy
- Imaging is used to diagnose every case of cholelithiasis

Exclusion criteria:

- Open cholecystectomy

The characteristics of pain, dyspepsia and colonic symptoms were investigated by a standard questionnaire.

Prior to surgery, individuals' symptom profiles were assessed. A typical proforma for describing the characteristics of pain (location, duration, frequency, quality, periodicity and variables that cause and relieve it), as well as other dyspepsia symptoms such early satiety, nausea, vomiting, heartburn and colonic symptoms like bloating, constipation and diarrhea. Patients received proforma before the operation and six to twelve months later. Patients are followed up with over the phone or in person as needed.

A four trocar laparoscopic cholecystectomy was performed with electro cautery dissection. Patients underwent preoperative MRCP and if there were preop CBD calculi/Dilations, underwent endoscopic retrograde cholangiopancreatography (ERCP) and sphincterotomy or open CBD Exploration depending on the surgeon's preferences. Patients with prior episodes of jaundice, altered LFTs, dilated common bile duct and pancreatitis also underwent preoperative ERCP.

RESULTS

A total of 75 patients signed up for the research. Six of them were disqualified because they had undergone open cholecystectomy procedures. Five patients vanished while being followed up on. So, ultimately, 64 participants participated in this trial. With a median age of 45, there were twenty-four males and forty females. Eight patients described pain that was comparable to their preoperative symptoms (Fig. 1).

Patients who lost their symptoms were categorized as being in the asymptomatic group. Every single postoperative patient had normal LFT results. One patient experienced a postoperative biliary leak problem.

Of 64 patients who had a laparoscopic cholecystectomy. For uncomplicated symptomatic gallbladder disease, thirty female and twelve male patients received surgery. Twelve males and ten females underwent the difficult illness procedure. Eight men and seven women suffered acute cholecystitis. Two males and three females had

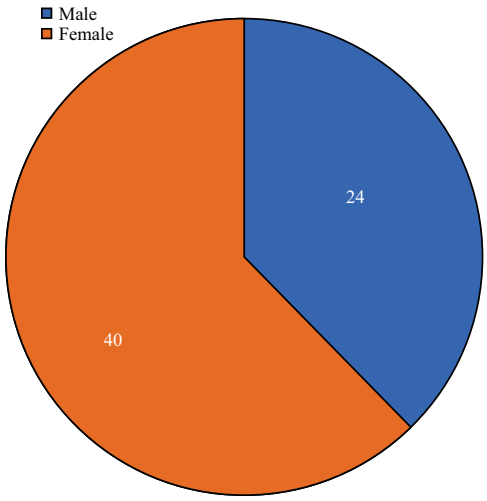

Fig. 1: Gender distribution of the participants

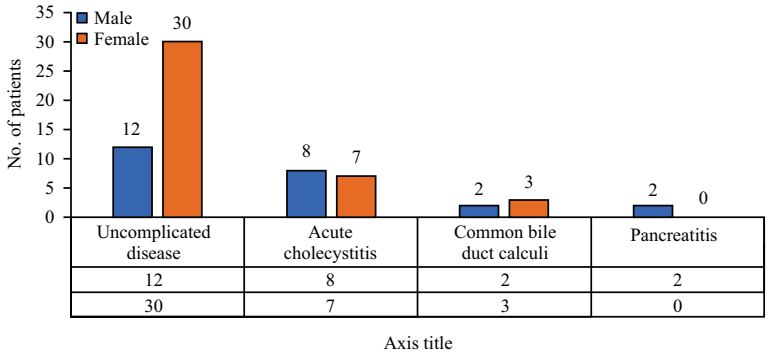

Fig. 2: Complicated with uncomplicated disease

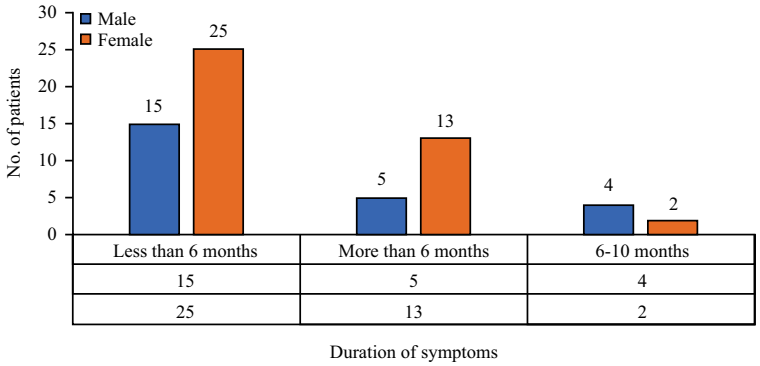

Fig. 3: Duration of symptoms

calculi in their common bile ducts. The pancreatitis of two men was made worse by CBD calculi. Following surgery, ERCP was performed on this patient (Fig. 2).

The duration of these symptoms was less than six months for 28 females and 10 males. Nine males and eleven females reported having their symptoms for more than six months. Postoperatively Eight patients had symptoms between 6 and 10 months later. Two men and six women were among them (Fig. 3).

The majority of patients reported experiencing upper abdominal pain. Nearly all of the symptomatic group reported upper abdomen pain and many also reported back pain. More patients than colicky pain complained of persistent pain. Most asymptomatic people had shorter pain durations than symptomatic people (less than 30 min). The most typical dyspeptic preoperative symptoms are nausea and food

Table 1: Symptoms of patients according to their body part

Symptoms	Asymptomatic (52 patients)	Symptomatic (12 patients)
Pain		
Upper abdomen	46 (88%)	8 (67%)
Lower abdomen	8 (12%)	4 (33%)
Radiation to back	26 (50%)	6 (50%)
Quality of pain		
Sharp	30 (57%)	7 (58%)
Cramp	5 (9%)	3 (25%)
Burning	7 (13%)	2 (16%)
Crushing	6 (11%)	0
Dull	4 (7%)	0
Periodicity		
Constant	39 (75%)	7 (58%)
Colic	13 (25%)	5 (42%)
Frequency (per week)		
<1 Attack	40 (76%)	8 (75%)
>1 Attack	12 (24%)	4 (25%)

intolerance. Vomiting and heartburn are some common symptoms. The most typical colonic symptom is bloating (Table 1).

The resolution of preoperative symptoms determines the outcome of surgery. In this study, early satiety and food intolerance had the highest success rates, followed by vomiting and heartburn. Colonic symptoms such bloating and constipation had decreased success rates or none at all.

DISCUSSIONS

A cholecystectomy surgery itself is linked to a number of physiological alterations in the digestive system. After a cholecystectomy, hormonal alterations that largely affect the upper digestive system also become apparent[3]. Additionally, there is a disruption of the cholecysto-sphincter of Oddi reflex, cholecysto-antral reflex and cholecysto-esophageal reflexes. Gastritis, duodenogastric reflux and gastro-esophageal reflux are therefore more common and they may be the cause of PCS symptoms. Therefore, it should not come as a surprise if symptoms linger or worsen after gallbladder removal[4].

Terhaar *et al*.[5] reported that although MRCP is the gold standard imaging modality, it should only be performed if the common bile duct is determined to be more than 10 mm dilated in a retrospective investigation of 42 individuals. An ERCP can be carried out to remove the stone or invasively treat the pathologic cause once a diagnosis has been made. The non-invasive biliary scintigraphy has been promoted as being reasonably reliable for assessing sphincter of Oddi activation. However, if symptoms start to appear just a few weeks following a cholecystectomy, an upper GI endoscopy is recommended because the problem is probably upper GI-related.

Different etiologies for PCS can be classified into four main groups: Extra-biliary, biliary, organic and functional. In fact, our findings concur with those of earlier research that identified extra-biliary conditions as reflux esophagitis, peptic ulcer disease and dyspepsia as the primary causes of the condition.

With a prevalence of 5-15%, residual or new bile duct stones are the most prevalent biliary etiologies. Other often identified reasons include abscesses, chronic bilomas, bile leaks, biliary strictures, lengthy remnants of the cystic duct, stenosis and sphincter of Oddi dyskinesia.

To our knowledge, there is no statistically significant correlation between PCS and the age, sex and race-related variables. It has been shown that females had a greater overall incidence but this is probably because more females have cholecystectomy procedures each year.

Additionally, despite symptoms being most prevalent in the 40-60 age range, there is no statistically significant correlation between PCS and age. The same is true for race, smoking history and BMI level, none of these variables are statistically related.

Obesity and/or a history of tobacco use should not be regarded as risk factors for PCS, they should also not automatically raise concern for this diagnosis, unless of course their symptoms call for a high level of suspicion.

We must speculate as to what can shorten hospital stays now that a definite correlation between hospital stay and healthcare costs has been established[6].

In conclusion, there is a critical need among hospital workers and medical specialists to identify PCS at the earliest possible stage.

CONCLUSION

This study's 13% post-cholecystectomy incidence was comparable to that in several earlier investigations. Duodenal ulcers were discovered in two patients who had chronic upper gastrointestinal symptoms and upper GI problems had cure rates of about 80%, indicating that some upper GI symptoms might be brought on by biliary disease that can be treated with cholecystectomy. Therefore, non-specific dyspepsia and heartburn are insufficient indications for cholecystectomy and colonic symptoms had low cure rates. Psychiatric illnesses including depression and a

history of using drugs like antidepressants were both present in people with persistent colonic symptoms. As a result, those who have used psychotropic medicines may have irritable bowel syndrome and gall bladder calculi without any symptoms. Laparoscopic cholecystectomy is unlikely to be advantageous for such patients.

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