

FREQUENCY OF POST-CHOLECYSTECTOMY SYNDROME AMONG PATIENTS UNDERGOING CHOLECYSTECTOMY: A TEACHING HOSPITAL EXPERIENCE

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Abstract

Background and Objectives: Post-cholecystectomy syndrome is defined as upper abdominal pain or dyspepsia that persists after the cholecystectomy. Some studies show its incidence is about 40%. This study aims to find out the frequency of early post-cholecystectomy syndrome at our hospital and its possible cause.

Methods: It was an observational study conducted at POF Hospital Wah Cantt from January 2018 to January 2022. 505 patients who underwent cholecystectomy were included in this study to find the incidence and cause of post-cholecystectomy syndrome. All the data were noted in a predesigned proforma and entered in SPSS version 24.0.

Results: Out of 505, 59 patients were diagnosed as cases of post cholecystectomy syndrome with an incidence of 11.68%. 40(67.7%) were female, 19(32.2%) were male. The mean age of the patient was 38.43±8years. In 36(61%) patients, no cause of pain was found. In 12(20%) patients the cause was acid-peptic diseases. Three(5%) patients have CBD stones, 2(3.3%) patients have the remnant of the gallbladder, 2(3.3%) patients had a fluid collection, 2(3.3%) patient had pancreatitis, 1(1.6%) patient had scar pain (hypertrophic scar) and 1(1.6%) patient had periampullary growth.

Conclusion: The incidence of post-cholecystectomy syndrome is significant. Any patient presenting with pain postoperatively should be examined and thoroughly investigated for possible treatable causes.

Keywords: Post-cholecystectomy syndrome, Acid peptic diseases, jaundice, laparoscopic cholecystectomy.

How to cite: Azhar M, Ali M, Sadia, Latif M, Tahseen T, Aslam H, Azhar U. Incidence of Post-cholecystectomy Syndrome among Patients Undergoing Cholecystectomy - A Teaching Hospital Experience. JAIMC 2023; 21(04): 233-236

Post-cholecystectomy syndrome is referred to a group of symptoms that occurs after cholecystectomy. It includes a recurrence or continuation of upper abdominal pain as before surgery or the development of a new character of pain. Some patients may present with dyspepsia and jaundice.¹ This syndrome was first described by Womack in 1947. He explained it as the persistence of symptoms after cholecystectomy.

It could occur in the early postoperative period or months and years after cholecystectomy. Its incidence is reported as high as 40% with female predominance.² The etiology of post-cholecystectomy syndrome includes acid peptic disease, common bile duct stone, bile leak or intrabdominal collection, large cystic duct stump or partial cholecystectomy, pancreatitis, biliary stricture, abdominal colic from bile salts and scar pain. In many cases, no etiology of this syndrome was found.³ There is no known risk factor for post-cholecystectomy syndrome but its incidence increased in urgent surgeries and cholecystectomy performed for other reasons than gall stones.⁴ Its diagnosis is made clinically on the sign and symptoms along with laboratory investigations (blood complete picture and liver function tests) and

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Submission Date: 11-05-2023

1st Revision Date: 28-05-2023

Acceptance Date: 20-12-2023

imaging (ultrasonography and MRCP). Treatment of this syndrome is according to the cause. Currently, cholecystectomy is one of the most commonly performed procedures on symptomatic as well as asymptomatic patients (on patient demand). Widely available ultrasonography increases the diagnosis of cholelithiasis and asymptomatic patient are also demanding cholecystectomy. The aim of this study was to calculate the incidence of post-cholecystectomy syndrome at a local hospital in order to counsel patients who were undergoing cholecystectomy about outcomes especially those with asymptomatic gallstones and to analyze the cause of post-cholecystectomy syndrome in order to plan tailored treatment for each case and make some guidelines for cholecystectomy to prevent this syndrome if possible.

METHODS

This was an observational study of 505 patients who were diagnosed and operated on for cholelithiasis (laparoscopic and open), conducted at P.O.F Hospital Wah Cantt from January 2018 to January 2022 after approval from the ethics committee. The pre-operative (age, sex, blood CP, LFTs, ultrasound) and operative findings were documented on computer proforma. All these patients were followed up for 3 months for pain after discharge. All patients undergoing cholecystectomy were included and patients with previous upper abdominal surgeries were excluded from this study. Out of 505 patients, 59 presented back with pain abdomen and were diagnosed as a case of post-cholecystectomy syndrome based on history and clinical examination. Those with severe pain were admitted to the hospital and the rest were investigated and followed up in OPD. Detailed history and examination were performed. Investigations like blood complete picture (to rule out infected etiology), LFT (for liver dysfunction, obstructed jaundice, and viral hepatitis), and ultrasound (for collection, cystic dust stone, and remnant) were done in all cases, MRCP (for CBD stone and stricture) and ERCP selected were done to diagnose the cause, and findings were noted on proforma. In cases in which no cause was found

omeprazole 40 mg once daily was started. Those who responded to omeprazole were diagnosed as cases of acid peptic diseases and those who did not respond were labeled as having unknown causes. In these cases, NSAIDS was started and referred to pain clinics for pain management. Patients diagnosed with the surgical cause were booked for surgery and those who required medical review were referred to medical clinics.

SPSS version 17 is used to analyze the data. The result was presented by using numbers and percentages.

RESULTS

Out of 505 patients 59 were diagnosed as the cases of post cholecystectomy syndrome. Incidence at our hospital was 11.86%. A total of 40(67.7%) were female, 19(32.2%) were males. The mean age of the patients was 38.43±8 years. 4(6.7%) patients were admitted through emergency and 55(93.2%) were managed through OPD. Out of 59 patients, 41(69.49%) had no evidence of acute cholecystitis on blood cp and ultrasound prior to surgery and 18(30.50%) patients were diagnosed as cases of acute or chronic cholecystitis. Presenting signs and symptoms are in Table I.

In 48(81%) patients no abnormality was found in any investigation. 6(10%) patients display abnormal LFTs, and 5(8.4%) patients show raised TLC on laboratory data. Ultrasound detect dilated biliary channels in 5(8.4%) patients and subhepatic collection in 2(3.3%) patients. Serum amylase was raised in 2(3.3%) patients. MRCP detects dilated hepatic channels in 5(8.4%)

Table 1: Presenting signs and symptoms of post-cholecystectomy syndrome

Sign and symptom	Frequency (percentage)
Epigastric pain, dyspepsia	19 (32%)
Upper abdominal pain	35 (59%)
Generalized abdominal pain	5 (8.4%)
Jaundice	4 (6.7%)
Fever	4 (6.7%)
Vomiting	8 (13.5%)
Abdominal tenderness	5 (8.4%)
Abdominal guarding	3(5%)
Multiple signs and symptoms in cases counted	

cases with 2(3.3%) cases of CBD stones and 1(1.6%) case of periampullary growth further confirmed and managed by ERCP.

Regarding the cause in 36(61%) patients, no cause of the pain was found. In 12(20%) patients the cause was acid-peptic diseases. 3(5%) patients have CBD stones, 2(3.3%) patients have the remnant of the gallbladder, 2(3.3%) patients had a fluid collection, 2(3.3%) patient had pancreatitis, 1(1.6%) patient had scar pain (hypertrophic scar) and 1(1.6%) patient had periampullary growth. (Table 2)

Regarding treatment in 48(81%) patients in which no abnormality was found pump inhibitors were started, and 12 (20%) patients responded. These patients were diagnosed with cases of acid peptic disease and the rest of the 36(61%) patients were given NSAIDs and were referred to the pain clinic and labeled as unknown cause. Patients with CBD stones (3 cases) were referred

Table 2: Frequency of cause of post-cholecystectomy pain (n=59)

Cause	Frequency	Percentage
No cause of pain	36	61%
Acid peptic disease	12	20%
CBD stone	3	5%
Remanent gall bladder	2	3.3%
Fluid collection	2	3.3%
Pancreatitis	2	3.3%
Scar pain	1	1.6%
Periampullary growth	1	1.6%

to a gastroenterologist for ERCP. For patients with remanent gall bladder (2 cases) surgery was planned. Ultrasound-guided aspiration was done in cases of fluid collection (2 cases). Patients with pancreatitis (2 cases) were admitted and were managed conservatively. The patient with hypertoroid scar (1 case) was given a local steroid injection and in the patient with periampullary growth (1 case) endoscopic biopsy was done.

DISCUSSION

Cholecystectomy can lead to many physiological changes in the body including cholecysto-antral reflex, cholecysto-sphincter of Oddi reflex, and cholecysto-esophageal reflexes that might lead to the development

of post-cholecystectomy syndrome.⁵ In our setup, investigations like the sphincter of Oddi manometric studies were not available to know the cause of this syndrome.

Post-cholecystectomy may develop up to 20 years after surgery. Our follow-up was limited which would be the reason for the low incidence in our study as compared to other studies. Confounders like hiatal hernia and APD are very difficult to overcome as no accurate diagnostic tool is present to differentiate from biliary dyspepsia

The frequency of post-cholecystectomy in our study (11.8%) was less as compared to international studies; Zhou shows the incidence as high as 40% in his study⁶. Shirah BH, et al. in their article showed an incidence of 18% in their study.⁷ Schofer in his article shows an incidence of 47%.⁸ The high incidence in these studies as compared to ours may be due to the long follow-up of patients. Female predominance is the same as compared to other studies; Saleem in his article shows the same result with 77.8 %(214) female and 22.2%(61) male with post-cholecystectomy syndrome.⁵ Nasir A in his article also shows female dominance at 18.73% as compared to males at 11.68%.⁹ The mean age in our study was 38.43±8 years. Nasir A in his study shows a mean age of 45±20 years⁹. Shirah BH, et al in a study show the mean age of the patients was 37.41± 7.12 years⁷. The mean age in the two studies is comparable and one study age is on the slightly higher side.

Regarding signs and symptoms, all articles show the same result with dyspepsia, and upper abdominal pain is the most common presenting complaint.⁶⁻⁹

All studies performed the same investigation.⁵⁻⁹ Our study lacks upper GI endoscopy and sphincter of Oddi manometric studies. upper GI endoscopy was performed to find the cause nearly in all mentioned studies to rule out the cause. Sphincter of Oddi manometric studies was performed in a few studies only. Shirah BH, et al in their article show sphincter of Oddi stenosis in 4% of cases.⁷ Saleem in his study also performed manometric studies there was no case of the sphincter of Oddi dysfunction reported.⁵ Some studies

prove that even if the manometric evidence of sphincter dysfunction is diagnosed, it does not prove that it is the cause of the symptoms.¹⁰ Still, sphincter of oddi dysfunction is a known rare cause of post cholecystectomy syndrome which may need ERCP and sphincterotomy to relieve the symptom.

Shirah BH, et al, Saleem, and our study show the same result regarding the most common cause of post-cholecystectomy syndrome in all three studies most common cause was unknown, 18% (50 patients), 59%, and 61% (36 patients) respectively. Nasir A in his article shows acid peptic diseases as the most common cause in 50.49% (51 patients) which is the second most common cause in our study 20% (12 cases). The same study shows unknown causes in 12.87% (13 patients) of cases. In the rest of the studies causes vary in percentages but more or less etiological causes remain the same.

In our study 41(69.49%) patients of post cholecystectomy syndrome had no evidence of acute cholecystitis on blood cp and ultrasound before surgery and 18 (30.50%) patients were diagnosed as cases of acute or chronic cholecystitis. Our study indicates that patients with silent stones or with simple biliary colic are at more risk for developing post-cholecystectomy syndrome. No such comparison was seen in other studies.

CONCLUSION

Post-cholecystectomy syndrome has a high incidence in patients undergoing cholecystectomy should be informed about the persistence of symptoms or the development of new symptoms before surgery. Any patient presented with this syndrome should be investigated thoroughly as many of the patients went undiagnosed of the cause.

Ethical Approval:

The ethical Approval for this study was obtained from POF Hospital, Wah Cantt. (Reference No. WMC/SUR/17/RA/12).

Conflict of interest

None

Funding Source

None

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