



**ORIGINAL RESEARCH PAPER**

**Surgery**

**A STUDY ON CLINICAL PROFILE OF POST-CHOLYCYSTECTOMY SYNDROME AFTER LAPAROSCOPIC CHOLECYSTECTOMY**

**KEY WORDS:**

**Dr. Brish Bhan Gupta\***

M.S., M.Ch., Assistant Professor, Department of Surgery, Katihar Medical College & Hospital, Katihar, Bihar \*Corresponding Author

**Dr.(Prof.) M.Arif Ansari**

M.S., Professor, Department of Surgery, Katihar Medical College & Hospital, Katihar, Bihar

**ABSTRACT**

In recent decades laparoscopic cholecystectomy has gained a status of one of the most commonly performed abdominal operations. This is due to a brisk rise in the incidence of calculus disease of the biliary tract. Also there has been a noticeable increase in its incidence in lower age groups (< 20 years). Due to the greater numbers of laparoscopic cholecystectomies being performed, the number of patients unimproved by the procedure has also increased proportionately. The study was done AT DEPARTMENT OF SURGERY, KATIHAR MEDICAL COLLEGE & HOSPITAL, KATIHAR from January 2017 to December 2018. Total 200 cases, who had undergone laparoscopic cholecystectomy were studied and followed up. Cases were studied by detailed history, thorough clinical examination and detailed investigations like routine investigations, imaging studies and other special investigations as and when required. Data was collected and analysed for study. Two hundred Laparoscopic cholecystectomy cases have been followed between 2017-2018, out of which 150 were female and 50 male. Post cholecystectomy syndrome was observed in 40 cases giving 20%, consisting of 29 females and 11 males. The age group upto 30 years had minimum percentage (17.54%) of symptomatic cases whereas maximum were seen after 60 years of age. Most of the symptomatic cases (40%) came for the treatment within six months of the cholecystectomy. The complaints, details of the surgery and the follow up observations have been recorded. Cases were divided according to the presence of stone at their cholecystectomy into calculus and non calculus groups. The symptomatic cases were more (50% in non calculus groups than in the calculus group (18.75%). Symptoms related to hepatobiliary system including pancreas have been termed as "true post cholecystectomy syndrome." This was found in 8.5% cases. Advanced investigation techniques correct diagnosis as far as practicable and above all mature operative judgement and meticulous surgery will certainly bring down this undesired Post-cholecystectomy syndrome and finally wipe it out completely.

**INTRODUCTION**

In recent decades laparoscopic cholecystectomy has gained a status of one of the most commonly performed abdominal operations. This is due to a brisk rise in the incidence of calculus disease of the biliary tract. Also there has been a noticeable increase in its incidence in lower age groups (< 20 years). Due to the greater numbers of laparoscopic cholecystectomies being performed, the number of patients unimproved by the procedure has also increased proportionately. These symptoms can represent either the continuation of symptoms attributed to the gall bladder. Post cholecystectomy syndrome (PCS) also includes the development of the symptoms caused by removal of the gall bladder.

As a matter of fact, the symptoms presented by such patients are not always due to cholecystectomy but may be due to other factors related or unrelated to hepatobiliary tract disorders, thus uninfluenced by removal of gall bladder. So the term post cholecystectomy syndrome should only be precisely applied only to those postoperative symptoms considered to have originated in biliary tract.

Since last two decades, laparoscopic cholecystectomy has become the preferred and more common method of treating gallbladder disease. In India also, it has become the method of choice in advanced clinics and hospitals. The problem of PCS has decreased with the laparoscopic cholecystectomy but there still remains a vast scope for attempts to decrease its incidence.

First laparoscopic cholecystectomy was done by Muhe of Germany in 1985. Prof. Udwadia of Mumbai did first laparoscopic cholecystectomy in India.

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 gall bladder or (2) the development of new symptoms that might normally be attributed to the gall bladder. PCS is also the development of symptoms like gastritis or diarrhea caused by removal of the gall bladder.

Out of all laparoscopic cholecystectomies, regardless of the state of gall bladder, post cholecystectomy syndrome occurs in 10-20% of the total cases. In 10-15% of calculus cases and in 15-40% of non calculus cases.

According to Ernest lack(2000), one risk factor for PCS includes not being certain of the diagnosis prior to the gall bladder removal. In general, the longer the symptoms lasted prior to the gallbladder removal, the greater the chance of developing PCS. If the symptoms are present less than a year before gallbladder removal, 15.4% of patients has been shown to develop PCS. If the symptoms last from 6-10 years, 31% have been shown to develop PCS and if the symptoms last for more than 10 years, 34% have been shown to develop PCS. If the gallbladder is removed to treat gallstone, approximately 20% of patients develop PCS. If the surgery is not performed to remove gallstones, anywhere from 10 to 25% of patients develop PCS. If the common bile duct is cut open, in addition to gallbladder removal 23% of patients develop PCS. If the common bile duct is cut open and the gallbladder is removed, 19% of patients develop PCS.

Younger patients have generally been found to have an increased risk of developing PCS. For example, people aged 20-29 years that had the gallbladder removed have been found to have a 43% chance of developing PCS, whereas 30-39 year old have a 27% chance, and 40-49 year olds, have a 21% of chance, 50-59 year olds were found to have a 26% chance of developing PCS and 60-69 year olds were found to have a 31% chance of developing PCS, Females were found to develop PCS more as compared to males. Another risk factor for PCS is having a psychiatric (mental health) disorder. About 50% of patients with a mental health disorder were found to develop PCS compared to patients without psychiatric disorder (of which 20% developed PCS.)

**MATERIALS AND METHODS**

The study was done AT DEPARTMENT OF SURGERY, KATIHAR MEDICAL COLLEGE & HOSPITAL, KATIHAR from January 2017 to December 2018. Total 200 cases, who had undergone laparoscopic cholecystectomy were studied and followed up. Cases were studied by detailed history, thorough clinical examination and detailed investigations like routine investigations

,Imaging studies and other special investigations as and when required. Data was collected and analysed for study.

## RESULTS AND DISCUSSION

### SEX INCIDENCE:

In the present study 150 females and 50 males were encountered. But the syndrome was seen in 40 cases(20%) in which females were 29(19.33%) and males 11(22%).

### AGE INCIDENCE:

In the present series majority of the cases who developed symptoms were of age group between 31-60 years.

### ASYMPTOMATIC PERIOD :-

The symptom free interval between cholecystectomy and the development of first symptom has been termed as asymptomatic period. The majority of the cases ( 40 %) presented for treatment within six months of there cholecystectomy. The minimum and maximum symptom free interval was 0- 10 years respectively with an average of two years.

In the present series of about 200 cholecystectomised patients, 40 developed PCS and their average age was 40 years. Asymptomatic period was 0- 10 years with an average of two years.

Different symptoms in post laparoscopic cholecystectomy cases might take different intervals to appear. In cases of earlier arrival of symptoms, the residual pathology like hepatitis , cholangitis, left out stone in common bile duct might be responsible. In late arrival cases , the subsequent pathology like common bile duct stricture, reformed stone in common ble duct and flaring up of malignant conditions are considered.

### Incidence of post- cholecystectomy syndrome after laparoscopic cholecystectomy

Total number of follow up cases have been divided into calculus and non calculus group according to the presence of stone in their gall bladder at the cholecystectomy. The incidence of PCS was more(50%) in non calculus group than the calculus group ( 18.75 %) after laparoscopic cholecystectomy.

The symptom complex referable to hepatobiliary system including pancreas have been named as " true post cholecystectomy syndrome ". Again the incidence of this true syndrome was more ( 20 %) in non calculus group than calculus group ( 7.9%).

In the present series the incidence of true syndrome , considering both of the calculus and non calculus groups together was 8.5 %.

### Classification of post- cholecystectomy syndrome:-

The post- cholecystectomy syndrome has been classified clinically on the basis of the gradation of the symptoms as mild and severe. It has also been considered from the etiological perspective in the following manner :-

#### True syndrome :-

Symptoms arising from the disordered hepatobiliary system including the pancreas and the sphincter of oddi.

#### False syndrome :-

Symptoms arising from other structures in the abdomen or outside.

In the present series the gradation was based on the symptomatology complained by the patient as mild and severe.

#### Clinical features :-

The important clinical features were pain in 90 % of cases, jaundice – 62 % , nausea and vomiting – 73 % and constitutional disturbance ( fever )- 55 %. Additional features were indigestion ( 40 % ), belching (heart burn) – 45 % , bowel disorder ( constipation and diarrhea) – 52 % and fat intolerance – 50 %.

### Pain :-

Pain was the most common symptom in the studied cases. It was observed more commonly in epigastrium ( 58 % ) than in the right hypochondrium ( 42 % ) and was most commonly ( 60 % ), dull ache (mild) in nature than colicky (severe) – 40 %.

The factor responsible for pain was thought to be gastric hyperacidity, though significant hyperacidity was found only in 6 cases ( 15 % ) of the present series. Dull aching pain ( mild ) in the explored cases was found to be due to associated cholangiohepatitis and pancreatitis. The colicky pain ( severe degree ) found in 40 % of the present series was due to obstruction at the lower end of the common bile duct either by stone or spasm and stenosis of the sphincter of oddi.

Associated inflammation lowers the tolerance of pressure even below 100 mm of water against the normally tolerance pressure upto 500 mm of water.

### Jaundice :-

It was the next important in 25 cases ( 62%) of the present series ranging from mild to severe degree of icterus.

### Routine investigations :-

#### Urine:

Routine examination of urine revealed albumin in 5 cases(121.5%), sugar in 1 case(2.5%), bile salt in 12 cases(30%) and bile pigment in 15 cases(37.5). Urinary urobilinogen was present in 2 cases (5%) indicating the incapability of liver cell dut to the associated pathological changes in liver parenchyma.

#### Blood:

Routine examination of blood indicating the low value of hemoglobin (below 10gm% ) in 16 cases(40%). High value of erythrocyte sedimentation rate (above) 20mm was noticed in 4 cases (10%). Abnormal value of total white cell count was observed in 5 cases(12.5%) of present series.

#### Stool:

Routine examination of stool revealed intestinal parasitic infestation in 6 cases (15%). Out of these protozoal infection (Entamoeba histotica) was seen in 2 cases (5%) and helminatic infection namely Ancylostoma duodenale in 2 cases (5%) and Ascaris lumbricoides in 2 cases(5%) only.

Occult blood in stool examination was found in 5 cases (12.5%). Abnormal fat content of the stool (above 6gm, daily) was present in 5 cases(12.5%).

#### Liver function tests:

Serum bilirubin level was more than 2mg% in 18 cases (45%) of the present series.the highest serum bilirubin level obtained was 16mg%, serum albumin was less than 3mg% 4 cases (10%). There was alternation of albumin and globulin ratio. Serum alkaline phosphatase level was more than 13KA units in 12 cases(30%).

#### USG findings:

In the present series, positive USG findings were detected in 23 cases. In 9 patients(22%) stones were detected in CBD. 4 cases (10%) were detected to be having CBD stricture and proximal dilatation of bilation and biliary apparatus. Biliary fistula was found in 2 cases(7.5%). Pancreatitis was present in 2 cases (5%). One case each (2.5%) of hepatitis, right subhepatic abscess, cirrhosis of liver, malignancies of liver, pancreas and ampulla of vater were found.

#### ERCP

5 cases were sent for ERCP study. They showed following findings-stenosis of sphincter of oddi 2 cases(5%) stones in CBD 2 cases(5%) and stricture of CBD-1 case(2.5%).

#### Left stone, common bile duct:

Stone in the common bile duct was visualized by different studies in 9 cases(22.5%) of the present series. In 9(22.5%) out of 18

explored cases, choledocholithotomy was performed, constituting to a relief in distress.

#### **Biliary fistula:**

In the present series 3 cases(7.5%) had biliary fistula on the right side of the abdomen opening to the exterior through the skin, where the drainage tube was given at the end of the cholecystectomy. Those fistula started immediately after the drainage tube was removed. All of them had jaundice (plasma bilirubin above 4mg% in the post-operative system).

#### **Stricture of common bile duct:**

4 cases(10%) of the present series had stricture of bile duct shown by USG & ERCP. In 1 case (2.5%) re-exploration was done and the stricture segment exercised with end to end anastomosis of the severed ends.

In the present series injury to CBD, recurrent cholangitis prior to cholecystectomy, periductal fibrosis due to extravasation of infection bile or blood after cholecystectomy are responsible for the stricture.

#### **Stenosis of the sphincter of oddi:**

2 cases (5%) of the present series had stenosis of oddi which developed symptoms 1 year after the initial cholecystectomy. The patient had severe pain, fever and jaundice. Ultimately transduodenal sphincterotomy was done which was rewarded with cure.

#### **Adhesions:**

Adhesion between common bile duct with surrounding structures namely duodenum, stomach, liver, colon etc. has been observed in 3 cases(7.5%) of the present series. Periductal fibrosis plays a complex role in the cholecystectomised individuals. This is probably due to leakage of bile and blood causing irritation and inflammation over the surrounding structure due to lack of care during operation by inexperienced surgeon.

#### **Concomitant hepato - biliary disorders:**

The four(10%) of the present series there was involvement of liver (excluding malignant conditions) in the form of cholangitis-2 cases (5%), infective hepatitis-1(2.5%) and cirrhosis one case (2.5%). All those cases were treated with conservative measures. Except the only case of cirrhosis the rest were relieved of other symptoms.

Two cases of cholangitis of the present series had the feature of inflammation of pancreas and liver at their cholecystectomy.

In the present series it was marked that the liver disease became prominent when there was a prolonged and advanced cholelithiasis.

#### **Gastrointestinal disorders:**

The cause of gastrointestinal symptoms were observed in 12 cases (30%). This consisted of chronic peptic ulcer(duodenum and stomach) -5 cases (12.5%), parasitic infestation of the intestine 5(12.5%) and 2 cases (5%) of other intestinal conditions such as diverticulitis, irritable bowel syndrome.

#### **Hydronephrosis:**

Only one case 2.5% of the present series was diagnosed as mild hydronephrosis or the right kidney. The symptoms were relieved by conservative treatment.

#### **Malignant disease:**

In the present series 3(7.5%) cases had malignant disease, one each of liver, pancreas and ampulla of Vater. Patient with carcinoma of liver died within one year while those with carcinoma pancreas and ampullary carcinoma were in poor state two years after cholecystectomy.

The preparation and indication of cholecystectomy are the same whether it is performed by open or laparoscopy technique. Laparoscopic cholecystectomy is the procedure of choice for the majority of patients with gall bladder disease. The key in open

cholecystectomy, is identification and safe dissection of Calot's triangle.

#### **SUMMARY AND CONCLUSION**

Two hundred Laparoscopic cholecystectomy cases have been followed between 2017-2018, out of which 150 were female and 50 male. Post cholecystectomy syndrome was observed in 40 cases giving 20%, consisting of 29 females and 11 males.

The age group upto 30 years had minimum percentage (17.54%) of symptomatic cases whereas maximum were seen after 60 years of age.

Most of the symptomatic cases(40%) came for the treatment within six months of the cholecystectomy.

The complaints, details of the surgery and the follow up observations have been recorded.

Cases were divided according to the presence of stone at their cholecystectomy into calculus and non calculus groups. The symptomatic cases were more (50%) in non calculus groups than in the calculus group (18.75%).

Symptoms related to hepatobiliary system including pancreas have been termed as "true post cholecystectomy syndrome." This was found in 8.5% cases.

Pain was a constant feature in almost every case and was complained before and after cholecystectomy. Jaundice, vomiting, nausea and fever were found in more percentage of cases after operation than before.

The cause responsible for the "True syndrome" was found to be stone in the common bile duct, Stricture of common bile duct, biliary fistula, stenosis and spasm of sphincter of oddi, biliary dyskinesia and periampullary carcinoma. Their incidence and importance have been reported and analysed.

Investigations revealed that there were several associated conditions with the biliary disease responsible for dyspeptic and other symptoms in the cases under study. They were parasitic infestations, hepatitis, cholangitis, cirrhosis, gastroduodenal ulceration, diverticular disease of the colon and carcinoma of the liver.

Operative treatment adopted for 18 cases (45%) offered cure or relief in 15 cases (37.5%). Two cases were not benefited by surgery and one case (9.25%) died due to low condition.

Correct pre-operative diagnosis to distinguish the condition from other concomitant pathology would enable to reduce the incidence of this syndrome.

Advanced investigation techniques correct diagnosis as far as practicable and above all mature operative judgement and meticulous surgery will certainly bring down this undesired Post-cholecystectomy syndrome and finally wipe it out completely.

#### **REFERENCES:**

1. Show, C., O Hanlon D.M. Hepatogastroenterology, 2004 Jan-Feb. Fenlon B.M. Mc Entee, G.P.
2. Abu Farsakh NA, Stietieh M & Abu Farsakh J Clin Gastroenterol, 2009.
3. Coakley FV, Schwartz, L.H. & Blumgart L.H. -Radiology 2012 Oct.; 209 (1):141-6 (medline) Blumgart, L.H.
4. Corzolari, E. -Dig liver Dis. 2003 Jul.
5. Evans, P.R. Bak, Y.T. Shuter B-Dig Dis.Sci. 2007 Oct.
6. Glenn, F (1952) - Quoted by Schofield, 2006
7. Rubini, G., Dimonte, M-Clin. Nucl. Med. 2009.
8. Steen, W. Jensen (2002)-Medline.
9. Tarik Albuzhi- Klin Khir., 2000 Oct.
10. Weir, J.F. & Snell, A.M. (1953)-Quoted by Troppoli et al., 2012.