CODEN [USA]: IAJPBB ISSN: 2349-7750

INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES

http://doi.org/10.5281/zenodo.3723468

Available online at: http://www.iajps.com Research Article

SAFETY AND FEASIBILITY OF LAPAROSCOPIC CHOLECYSTECTOMY FOR THE TREATMENT OF GALLSTONE PANCREATITIS

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Article Received: January 2020 **Accepted:** February 2020 **Published:** March 2020

Abstract:

Objective: *The occurrence of gallstone pancreatitis of acute nature is very common in whole world. This research work aimed to evaluate the safety and feasibility of LC (Laparoscopic Cholecystectomy) as a decisive therapy among patients suffering from mild or resolving gallstone pancreatitis.*

Methodology: *This study was a prospective research work carried out from August 2017 to July 2019. We diagnosed the patients with clinical examination, bio-chemical tests, ultrasound and enhanced computed tomography. The patients who were suffering from the disease of mild nature and offered Laparoscopic Cholecystectomy in hospital. We referred the patients for endoscopic sphincterotomy who were not fit for surgery. We excluded the stones of common bile duct before surgery.*

Results: *A sum of 38 patients who were suffering from acute gallstone pancreatitis were the part of this research work in the duration of this research work. The average age of the patients was 46.3 years. We referred 26.3% (n: 10) patients for Endoscopic Retrograde Cholangio Pancreatography and endoscopic sphincterotomy. We managed 28.9% (n: 11) patients by conservative treatment. The average duration of the period from the start of symptoms and Laparoscopic Cholecystectomy was 7 days with a range from 4 to 10. The average duration of the surgery was 45 minutes and stay in the hospital was 7 days. We found no operative mortality in this research work. We recorded no major intra-surgical or post-surgical complication. Nine percent (n: 2) patients were present with complications of minor nature.*

Conclusion: *We can perform the Laparoscopic Cholecystectomy safely in selected patients suffering from mild gallstone pancreatitis for the prevention of attacks of acute pancreatitis in future and other outcomes of late treatment. It also resolves the problem of noncompliance of treatment.*

Key Words: *Complications, Gallstone, Cholecystectomy, Endoscopic Retrograde Cholangio Pancreatography, Laparoscopy, Mild, Pancreatitis.*

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Please cite this article in press Muhammad Afzaal et al., ***Safety And Feasibility Of Laparoscopic Cholecystectomy For The Treatment Of Gallstone Pancreatitis,*** *Indo Am. J. P. Sci, 2020; 07(03).*

INTRODUCTION:

Acute pancreatitis is a challenge for clinicians regardless of advance standards of care in current world era. Gallstones are responsible for 30% to 50% patients as a factor of etiology [1,2,3]. Many advancements and developments in few past years have led us to the better administration and understanding of this medical scenario. The removal of gall bladder through surgical intervention biliary duct's clearance or vital steps in administration for the prevention from further attacks. The major common modality for the treatment is Laparoscopic Cholecystectomy in recent times [4, 5]. Proper timing of Laparoscopic Cholecystectomy in patients suffering from gallstone pancreatitis is very controversial issue [6,7,8]. There is also high concern about the compliance of patients for complete surgery because of poverty, un-acknowledgement and lack of education particularly in the countries which are under development. The main rationale of this research work was to evaluate the safety and feasibility of Laparoscopic Cholecystectomy as definitive treatment among patients present with mild and resolving acute gallstone pancreatitis.

MATERIAL AND METHODS:

This study was a prospective research work. The duration of this study was from August 2017 to August 2019 at Lahore General Hospital, Lahore. The clinical examination showed that the patients were present pain in the epigastrium with cholelithiasis on ultrasonography without or with stones in Common Bile Duct. The results of pancreatic edema on ultrasonography or computed tomography scanning showed enhanced pancreatic enzymes more than 3 times than normal and increased ALT (Alanine Aminotransferase) by 3 times or greater than this. We excluded the acute pancreatitis induced by alcohol. We labelled the other reasons of acute pancreatitis as drugs, after surgical intervention, hyperlipidemia, Endoscopic Retrograde Cholangio Pancreatography and idiopathic accordingly and we also excluded them from this research work. We graded the severity of this disease for selection purpose in accordance with the criteria of Ranson [9]. Mild ABP (Acute Biliary Pancreatitis) was classified by the patients with ranson's scores of less than three, whereas patients with greater than three scores were in the severe state of disease. We also excluded the patients who were suffering from this disease of severe nature. We considered the early Laparoscopic Cholecystectomy for the patients who got surgery between attack times to 10 days.

We took the written consent from the patients after describing them the purpose of this research work. We achieved the clearance of biliary tree either before surgery by endoscopic retrograde cholangio pancreatography or pre-operatively with the help of choledochoscopy. All the patients underwent Laparoscopic Cholecystectomy with the utilization of 4 ports in a standard way. We created pneumoperitoneum by the placement of first 10 mm port with the utilization of open Hasson method. We placed the other 10 mm port in the epigastrium. We placed two five millimeters ports in midline and right sub-costal site. We placed the other ports according to the needs. Diathermy was in use for dissection. Surgical and post-surgical parameters as average duration of surgery, ports amount, and average duration of stay in hospital, drain's placement and complications after surgery were present in records. We statistically analyzed all the collected information of this research work. Three months were the minimum period of follow-up.

RESULTS:

The average age of the patients was 46.3 years with female to male ratio of 11:27. Out of 38 patients who got admission with the presence of acute gallstone pancreatitis, 22 patients were suffering from mild disease and we selected them for therapy. 16 patients were in the severe stage of disease and got exclusion. 10 out of 16 patients suffering from severe disease were present to have the stones in Common Bile Duct. We referred them for Endoscopic Retrograde Cholangio Pancreatography. Laparoscopic Cholecystectomy was fully successful in 57.8% (n: 22) patients within 4 to 10 days with an average of 7 days after admission in hospital. We recorded the Common Bile Duct dilatation of greater than 6 millimeters in 6 patients.

Table-I: Demographics of Patients

No. of patients	38
Mean age (yrs.)	46.3
Male: Female ratio	0.48
Definitive treatment on index Hospital admission	22
Endoscopic Retrograde Cholangio Pancreatography For Definitive Treatment	5
Endoscopic Retrograde Cholangio Pancreatography Prior To Operation	5
Conservative treatment or no definitive treatment	11

The duration of the surgery varies from 25 to 55 minutes with an average age of 45 minutes. In most of the patients, 18 out of 22 (81.8%) were operated with the utilization of 4 ports, 4 out of 22 (22.7%) were in need of an additional port making 5 ports. In four (18.1%) patients, we faced difficult dissection comprising fibrous adhesions of the omentum with gallbladder. The mean duration of discharge was 7 days with a range from four to eleven days. There was need of drain placement in 6 (27.2%) patients. We found no serious complications. We observed the minor complications as infection of port in 2 (9%) patients. There was no operative mortality in this research work.

Table-II: Operative And Post-Operative Variables (n=22).

Variables	Frequency	Percentage
Mean duration (days)	7	-
No. of ports:		
Four	18	81.8
Five	4	18.1
Patients with difficult dissection	4	18.1
Mean operative time (minutes)	45	-
Mean hospital stay (days)	7	-
Placement of drain	6	27.2
Complications		
Major	0	0
Vascular	0	0
Ductal	0	0
Minor	2	9

DISCUSSION:

There is association of high rate of morbidity and mortality with the acute pancreatitis [9, 10]. After 1st attack, the rate of recurring of the biliary pancreatitis is 25% to 76% [11-12]. Majority of the surgeons providing treatment to the patients suffering from biliary pancreatitis, probably would still like to wait and carry interval cholecystectomy after 6 to 10 weeks [13,14,15]. The relationship between the acute pancreatitis and biliary stones may be as ancient as gallstones development, but Bernard in 1852 and Prince in 1882 reported it for the very first time [16]. Than Opie in 1901 in the autopsy of 2 patients who were present with acute pancreatitis, stated the impact of gallstones in ampulla [17]. The rate of mortality in the attacks with recurrence is from 10% to 40% [18]. Endoscopic Retrograde Cholangio Pancreatography does not has the ability to prevent the complications as acute Cholecystitis [19-20]. Gallstones migration causing the restriction in Common Bile Duct and pancreatic duct may be the reason of the activation for the start of the biliary pancreatitis [21]. Early cholecystectomy, open or laparoscopic, in administration of the mild acute pancreatitis is advocated by many research works of similar nature. But various other research works [22, 23] stated the delay for the interval cholecystectomy until 6 to 8 weeks because they all stated an enhanced method and high rate of morbidity and mortality induced by anesthesia. Despite the detailed counseling about the seriousness of the outcomes of the diseases, there is very poor follow up observed by the patients.

Now-a-days, the surgeons believe that timely surgical intervention in biliary pancreatitis do not pose any risk for the development of major complication which have association with the procedure of anesthesia or surgery. Nealon [24] advocated in his research work that deferring of surgery until 6 to 8 weeks for the prevention of the necrosis of pancreas in post-surgical period. Our research work (Table-2) as well as some other research works [10] have displayed Laparoscopic Cholecystectomy in mild nature acute biliary pancreatitis does not cause the development and progression of these types of complications. There are few research works which showed that acute

cholecystitis normally leads in technical difficulties in the duration of surgical intervention [25].

CONCLUSION:

There safe application of Laparoscopic Cholecystectomy in the patients present with gallstone pancreatitis of mild nature for the prevention of the further attacks of this complication and other outcomes related with the delayed therapy. It also resolves the issue of non-compliance of patients in developing countries where there is non-availability of the proper accurate treatment.

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