

Safety of Early Laparoscopic Cholecystectomy in Mild to Moderate Acute Pancreatitis

Muhammad Aslam Rai , M Fawad ASlam, Sara Aslam
Department of Surgery, Rai Medical College, Sargodha

Abstract

Background: To assess safety of early laparoscopic cholecystectomy in patients of mild to moderate pancreatitis

Methods: In this observational study patients (n=25) of acute pancreatitis, mild to moderate, of biliary origin were included . Diagnosis of acute biliary pancreatitis was based on upper abdominal pain, serum amylase level 3 times normal and gall stones sludge on Ultrasonography. To assess severity of pancreatitis Ranson criteria for gall stone pancreatitis was used. Ranson criteria less or equal to 3 was taken as mild to moderate pancreatitis, where as more than 3 was taken as severe pancreatitis. All patients were operated on under general anaesthesia, with antibiotic cover. Callots triangle was dissected isolating cystic duct and cystic artery Four port technique was used. Both were clipped doubly, cut and gallbladder dissected out with blunt and sharp dissection. Haemostasis was obtained. Gallbladder extracted out through epigastric port. At end all free fluid was sucked out. 4 patients had ERCP 4 to 7 days back with endoscopic sphinctrotomy.

Results: All patients presented with pain in epigastrium and upper abdomen with vomiting . Once symptoms improved, amylase dropped down below 3 times normal, repeat ultra sonogram was done to rule out pancreatic necrosis then proceeded for laparoscopic cholecystectomy. All 25 patients were operated on successfully laparoscopically without open conversion. No bile duct and bowel injury was registered. Twenty patients had wide cystic duct, two cystic duct needed ligation with vicryl . Post operative course went smooth, but needed more analgesics as compared to routine elective laparoscopic cholecystectomy. Ten patients were discharged 48 hours after surgery and 15 after 72 hours of surgery. One patient develop pseudo pancreatic cyst 4 weeks after laparoscopic cholecystectomy, resolved on medical management. There was no mortality and 2 cases were re-admitted. Common bile duct injury was not registered and no case underwent open conversion. There was no mortality.

Conclusion: Early laparoscopic cholecystectomy is safe and cost effective in mild to moderate acute pancreatitis.

Key Words: Early laparoscopic cholecystectomy, Acute Pancreatitis, Ranson criteria for gall stones pancreatitis

Introduction

Acute pancreatitis of biliary origin is common problem. Timing of laparoscopic cholecystectomy in acute pancreatitis is controversial, early surgery within same admission, or delayed operation, after 6 weeks, opinion is divided. Early laparoscopic cholecystectomy in mild to moderate acute pancreatitis, certainly decreases hospital stay, total cost, is safe, and protects patient from recurrent episode of pancreatitis, biliary colic, acute cholecystitis, obstructive jaundice. ¹

Acute pancreatitis is third most common gastrointestinal cause for acute hospital admission carrying mortality of 5 to 10 percent. ¹ Majority of cases are due to gall stones, sludge leading to biliary pancreatitis. Initial treatment of gall stones pancreatitis is supportive, definite treatment of gall stones pancreatitis to prevent recurrence requires cholecystectomy to remove source of gall stones. Without definite treatment recurrence rate is as high as 60 percent. ² There are chances of recurrent episode of biliary pancreatitis, common bile duct calculi leading to obstructive jaundice, biliary colic and cholecystitis with septicemia. Recurrent attacks of acute pancreatitis carries a morbidity of 30 to 40 percent and mortality of 10 percent. Risk of recurrent pancreatitis can be reduced by removing gall bladder in same admission index ERCP and sphinctrotomy can also prevent recurrent pancreatitis but will not prevent other complications of cholelithiasis and cholecystitis. Traditionally cholecystectomy in such patients has been delayed to allow recovery from physiological insult of pancreatitis. In last couple of years trend is developing for early surgical intervention. Cholecystectomy is definite treatment and delay may lead to fatal complications. ^{3,4}

Nowadays laparoscopic cholecystectomy is treatment of choice but timing of laparoscopic cholecystectomy in acute pancreatitis is controversial. Few advice early

laparoscopic cholecystectomy in same admission in mild to moderate pancreatitis .Others favor delayed surgery after 6 weeks of acute episode. Majority of patient with acute pancreatitis (80%) have mild course of disease but (20%) develop severe pancreatitis with high mortality.⁵ In severe pancreatitis, of course, surgery is done after settling of pancreatic necrosis and organ failure. Nationwide audit for Europe and USA have shown that laparoscopic cholecystectomy is usually performed around 6 weeks after discharge for mild pancreatitis. ⁶⁻¹⁵ There is no consensus of optimal timing of laparoscopic cholecystectomy in acute pancreatitis.

Patients and Methods

This observational study was carried out at Department of surgery, Rai Medical Complex, from April 2014 to March 2016 .Patients (n=25) of acute pancreatitis, mild to moderate, of biliary origin were included. Diagnosis of acute biliary pancreatitis was based on upper abdominal pain, serum amylase level 3 times normal and gall stones sludge on Ultrasonography. To assess severity of pancreatitis Ranson criteria for gall stone pancreatitis was used (Table 1)

Table 1: Ranson Criteria for acute pancreatitis

At Admission	
1. Glucose > 220/dl	
2. AST > 250 iu/l	
3. LDH > 400 iu/l	
4. Age >70 years	
5. WBC > 18000/cmm	
After 48 hours	
1. Calcium < 8mg %	
2. 79rHct drop > 10 %	
3. PaO > 60 mm Hg	
4. Base deficit > 5 meq /l	
5. BUN increase 2 mg %	
6. Sequestration of fluid > 4 l	

Ranson criteria less or equal to 3 was taken as mild to moderate pancreatitis and more than 3 was taken as severe pancreatitis. All patients were operated on under general anesthesia. Four port technique was used. Both were clipped doubly, cut and gallbladder dissected out with blunt and sharp dissection. Hemostasis was obtained. Gallbladder extracted out through epigastric port. At end all free fluid was sucked out. 4 patients had ERCP 4 to 7 days back with endoscopic sphincterotomy.

Results

Mean age of patients was 36(20-60) years. Twenty (80%) were female and 5 (20%) were male. All patients were having small amount of free fluid in peritoneal

cavity. Callots triangle was dissected isolating cystic duct and cystic artery. All patients presented with pain in epigastrium and upper abdomen with vomiting .After investigations, baseline and serum amylase, abdominal ultra sonogram was done to confirm diagnosis. Patients were kept nothing per oral, antibiotics and analgesics and intravenous fluids were given. Once symptoms improved, amylase dropped down below 3 times normal, repeat ultra sonogram was done to rule out pancreatic necrosis then proceeded for laparoscopic cholecystectomy. All 25 patients were operated on successfully laparoscopically without open conversion, there was not a single bile duct injury, no bowel injury. There was oedema of the wall of gall bladder in almost every patient that made dissection of gall bladder easy (Table 2). 20 patients were having wide cystic duct, two cystic duct needed ligation with vicryl .Post operative course went smooth, but needed more analgesics as compared to routine elective laparoscopic cholecystectomy. All patients received injection cefuroxime 1.5 gm 8 hourly during hospital stay and then twice daily for 5 days.

Table 2: Pattern of Adhesions

Fibrinous Omental	20	80%
Duodenal	2	8%
Transverse Colon	1	4%
Gall Bladder Wall Odema	25	100%
Difficult Callot's Triangle Dissection	1	4%

Table 3: Surgical Observations

No. of Ports	4	15
	5	10
Operating Time	30 Min	15
	45 Min	10
Wide Cystic Duct		20
Re-Admission with in 02 weeks		2
Drain		Nil
Complications		Nil
		Vascular
		Ductal

Table 4. Post Operative Stay in Hospital

Stay in Hospital	48 Hours	72 Hours
No. of Patients	10	15

One patient developed exacerbation of acute pancreatitis 4 days after discharge, needed readmission, recovered in weeks (Table 3). She was post ERCP and ES but unfortunately had missed stone in CBD, passed on postoperatively leading to acute pancreatitis. One patient developed pseudo

pancreatitis cyst 4 weeks after laparoscopic cholecystectomy, resolved on medical management. There was no mortality and 2 cases were re-admitted. All patients had successful surgery, not a single common bile duct injury, no open conversion. One patient developed pseudopancreatic cyst 4 weeks after surgery, one readmission for recurrent acute pancreatitis. No mortality. Ten patients were discharged 48 hours after surgery and 15 after 72 hours of surgery (Table 4).

Discussion

Timing of definite procedure, laparoscopic cholecystectomy, in acute pancreatitis is controversial. We went for laparoscopic cholecystectomy in mild to moderate cases of acute pancreatitis once serum amylase settled below three times normal and patient was clinically stable. Usually on day 3 or 4 of admission. It was easy to do dissection in Callots triangle due to edematous tissue, easy dissection of gall bladder from liver bed with minimal haemorrhage. Not very difficult than elective laparoscopic cholecystectomy in chronic Cholecystitis. Mostly patients were discharged within seventy hours after surgery. Several treatment guidelines recommend that cholecystectomy should be performed in the first week after recovery of mild to moderate acute pancreatitis in order to minimize readmission for biliary events In our study we found that laparoscopic cholecystectomy should be performed during same admission because an early procedure was not associated with increased risk of complications. Whereas interval cholecystectomy, after 40 days, is associated with large risk of biliary events recurrence about 18%. As long as gall bladder is in situ, these patients are at increased risk for readmission for biliary events including potentially fatal episode of acute pancreatitis. Traditionally it is thought that patient should recover fully before surgical intervention, we performed surgery in same admission, with total hospital stay of 4 to 7 days. Prabhu et al studied 26 patients with acute biliary pancreatitis, underwent lap. chole. in same admission and 17 patients had delayed surgery with no significant operative difficulty and no open conversion.¹³ Abouliao A et al recommends early laparoscopic cholecystectomy within 48 hours of onset of symptoms in mild to moderate pancreatitis with no apparent difference in conversion rate from lap to open.¹⁴ There is significant less operative time and total hospital stay associated with early laparoscopic

cholecystectomy when performed within 2 weeks of start of symptoms.¹⁵ Total operative time was 25 to 45 minutes from CO₂ insufflations to wound dressing in our series as it is in elective non complicated chronic Cholecystitis. Early laparoscopic cholecystectomy in acute pancreatitis certainly decrease hospital stay, readmission for biliary events and total cost of treatment. As hospitals in our country are over burdened, we must take initiative for early laparoscopic cholecystectomy, which will result in increase turnover of patient, overall shorter hospital stay, cost effective, and save patient from complications of recurrent severe pancreatitis, biliary colic and empyema gallbladder.

Conclusion

Early laparoscopic cholecystectomy is safe and cost effective in mild to moderate acute pancreatitis.

References

1. Shaheen NJ, Hansan RA, Morgan DR. Burden of gastroenterology and liver disease; 2006, *Am J Gastro* 2006;101,2128-38
2. Lee JK and Park JK. Role of endoscopic sphincterotomy and cholecystectomy in acute biliary pancreatitis. *Hepatogastroentrol*, 2008;55(88):1981-85
3. Wilson CT and de Moya MA. Cholecystectomy for Acute Gallstone Pancreatitis: Early Vs Delayed Approach. *Scandinavian journal of surgery* 2010; 99:81-85
4. Khan MS, Khan JS, Khan MM. Mild to moderate acute biliary pancreatitis, frequency of conversion from laparoscopic to open cholecystectomy in early versus delayed surgery. *Professional Med J* 2014;21(3):519-21
5. Banks PA and Freemantle ML. Practice guidelines in acute pancreatitis. *Am J Gastro* 2006;101(10):2379-82
6. Bakkel OJ, Vansant Voot HC, Hagenaars JC. Timing of cholecystectomy after mild biliary pancreatitis. *BJS* 2011; 98(10):1446-54.
7. Barnard J and Siriwardena AK. Variation in implementation of national guideline for treatment of acute pancreatitis. *Annl R Coll Surg Engl* 2002;84(2):79-81
8. El Dhuwaib Y, Deakin M, David GG, Durkin D, Corless DJ. Definite management of gall stone pancreatitis in England. *Ann R Coll Surg Engl* 2014;94(6):402-06.
9. Mc Alister VC, Davenoort E, Renouf E. Cholecystectomy differed in patient with sphincterotomy. *Cochrane Database system Rev* 2007;(4):CD0062
10. Nguyen GC, Boudrean H, Jagannath SB. Hospital volume as predictor for undergoing cholecystectomy after admission for acute biliary pancreatitis. *Pancreas* 2010; 39(1): 42-47.
11. Sandze R and Colln B. Cholecystectomy in patient with mild acute biliary pancreatitis. *BMJ Gastro* 2009; 9;80, 1988-91.
12. Senapati PS, Bhattacharya D, Harinath G. Survey of timing and approach to surgical management of cholelithiasis in patient with acute pancreatitis. *Ann R Coll Surg Engl* 2003; 85;306-12.
13. Prabu RY, Irpatgitre R, Naranje B. Influence of timing on performance of laparoscopic cholecystectomy for acute biliary pancreatitis. *Top Gastroentrol*, 2009;30(2);113-15.
14. Abouliao A, Chan T, Yaghoubian A. Early cholecystectomy safely decreases hospital stay in patients with mild gall stone pancreatitis. *Adv Surg*; 2010;40:265-84.
15. Wilson CT, de Moya MA. Cholecystectomy for acute gall stone pancreatitis early vs delayed approach. *Scandinavian J Surg* 2010;99;81-85.