Assessment of early results of surgical treatment of acute biliary pancreatitis at Viet Duc University Hospital

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Abstract

Introduction: Acute pancreatitis is a disease caused by pancreatic enzymes from the inactive form being activated in the pancreas, causing self-destruction of nearby tissues and organs. Gallstones are one of the causes of acute pancreatitis. Acute pancreatitis with mechanical etiology after stable treatment requires radical treatment. ERCP, percutaneous lithotripsy, and surgery are effective treatments. The purpose of this paper is to evaluate the early results of surgical treatment of acute biliary pancreatitis.

Patients and methods: A retrospective review of all patients diagnosed with acute pancreatitis due to gallstones was surgically treated at the Department of Hepatobiliary Surgery of Viet Duc University Hospital from January 2019 to December 2021.

Results: The study group has 49 patients (26 female, 23 male). The mean age at surgery was 56.8 (28-87 years). CT scan identified 100% of pancreatic lesions and gallstones before surgery, of which common bile duct stones accounted for 20.4%, the rest were common bile duct stones combined with gallstones and stones in the liver. One patient was diagnosed with septic shock caused by cholangitis had to be resuscitated before surgery. The surgical intervention on biliary tract was cholecystectomy, stone removal, endoscopic lithotripsy, T tube drainage, combined cholecystectomy and left lobectomy. Open surgery was performed on 35 patients, accounting for 71.4%, and laparoscopic surgery accounted for 28.6%. The intervention on the pancreas was on 8 patients, mainly removing the necrotic pancreatic tissue, draining the lesser sac. Most patients had surgery in the first 2 days, as early as 22 hours, as late as 8 days. There were two patients complicated the surgical site infection, two patients with biliary leak, one patient with acute pancreatitis, all were treated medically. The mean hospital stay was 5.1 days. Laparoscopic surgery gave good results, accounting for 92.9%, there were no severe cases of recurrence or death. 49 patients were followed up 30 days after surgery with a good result (85.7%), no mortality was observed.

Conclusion: Surgical treatment for acute biliary pancreatitis is safe which assesses pancreatic damage, gives good postoperative results.

Keywords: Acute pancreatitis, gallstones, surgery

Introduction

Acute pancreatitis is a disease caused by pancreatic enzymes from the inactive form being activated in the pancreas, causing self-destruction of tissues and nearby organs. Gallstones are one of the causes of acute pancreatitis[1].

Today, with the development of science and technology, along with the diagnosis and treatment prognosis, the complications of acute pancreatitis have changed a lot. It is necessary to thoroughly treat acute pancreatitis with mechanical causes after stable treatment to avoid the patient's recurrence and distant complications [8]. ERCP was discovered and has been successfully performed in 95% of patients, resolving gallstones, especially common bile duct stones causing acute pancreatitis to help patients limit the risk of pancreatic necrosis [9]. In addition to ERCP, there are other effective interventions, such as percutaneous bile drainage or extracorporeal lithotripsy. However, in many cases of large-size bile duct stones, gallstones causing cholecystitis, or acute pancreatitis, the above interventions are ineffective, so it is necessary to conduct surgery to solve the cause completely.

The purpose of this study is to evaluate the early results of surgical treatment of acute biliary pancreatitis.

Patients and methods

Subjects:

Includes all patients diagnosed with acute pancreatitis according to Atlanta 2012 (two out of three features: abdominal pain appropriate with acute pancreatitis, hyperamylasemia (or hyperlipasemia) at least three times excessed the normal range, pancreatitis typically on CT scan or abdominal ultrasound). Clinical manifestations and physical examination detected choledocholithiasis with gallstones, intrahepatic stones which were performed the choledocotomy to remove stones, Kehr placed associated with or without left lobectomy, cholecystectomy, open surgery and laparoscopic surgery at the Department of Hepatobiliary Surgery at Viet Duc Friendship Hospital from January 2019 to December 2021. Excluding patients undergoing ERCP intervention, percutaneous lithotripsy, patients with acute biliary pancreatitis with intrahepatic stones or gallstones but no choledocholithiasis.

Method:

Retrospective descriptive study.

The database was collected from medical records, completed research questionnaires.

Recording the characteristics of age, sex, medical history, clinical and subclinical symptoms, preoperative management, intervention methods on biliary tract and pancreas, complications after surgery.

Data processing:

All research data was analysed and processed according to the statistical algorithm of the program SPSS 22.0

Research ethics:

Patients were informed about the purpose of the study, the possible benefits, risks, and contributions to the science of the treatment.

The research topic has been approved by the council, patient information is kept confidential only to protect and improve public health, not for any other purpose.

Results

The study results showed that the average age was 56.8 ± 15.9, the youngest was 28 years, the oldest was 87 years old. In 49 patients, there were 23 males and 26 females, the female/male ratio was 1,13. There were 35 patients (71.4%) with amylasemia elevated 3 times higher than the limit level, 49 patients (100%) had pancreatitis and choledocholithiasis diagnosed using CT scan with single stone accounted for 20.4%, associated with gallstone and intrahepatic stones accounted for 79.6%.

Results of treatment

Table 1: Interventions on pancreas

Procedures	N	%
Removing necrotic pancreatic tissue + lesser sac drainage	5	10,2
Pancreatotomy + lesser sac drainage	2	4,1
Lesser sac drainage	1	2,0
No interventons	41	83,7
Total	49	100

In the patient's group with interventions on pancreas were 8/49 (16.3%), the most common was removing necrotic pancreatic tissue + lesser sac drainage.

Table 2: Interventions on bile duct

Surgical procedures / Biliary interventions	Open surgery		Laparoscopic surgery		Total	
	n	%	n	%	n	%
Choledochotomy to remove stones, perioperative lithotripsy, Kehr placement	22	68,7	10	31,3	32	65,3
Choledochotomy to remove stones, perioperative lithotripsy, Kehr placement, left lobectomy	4	100	0	0	4	8,2
Cholecystectomy, Choledochotomy to remove stones, perioperative lithotripsy, Kehr placement	7	63,6	4	36,4	11	22,4
Cholecystectomy, Choledochotomy to remove stones, perioperative lithotripsy, Kehr placement, left lobectomy	2	100	0	0	2	4,1
Total	35	71,4	14	28,6	49	100

Choledochotomy to remove stones, perioperative lithotripsy, and Kehr placement was indicated for all cases.

Discussions

Acute biliary pancreatitis: New finding in this study was that we studied the patients with acute pancreatitis caused by stones in the common bile duct, which may be accompanied by stones in the gallbladder, stones in the liver, while other authors studied patients with gallstones or intrahepatic stones alone without the presence of choledocholithiasis [10].

Follow-up studies on acute pancreatitis in general and acute biliary pancreatitis caused by immigrant worms particularly conducted by domestic authors, have so far provided a perspective on the management of patients with acute pancreatitis due to stones biliary-pancreatic worm stones which is to solve the cause of acute pancreatitis, infection, cholestasis, especially for patients with severe preoperative condition, need good resuscitation, only perform surgery when the disease is complete [2,6]. The patient's condition improves, stabilizes, and if surgery is required, only minimal and necessary surgical procedures should be performed. In our series, the intervention method to remove stones in the biliary tract by open surgery and laparoscopic surgery includes: choledochotomy to remove stones, possibly with cholecystectomy, left lobectomy. All patients included in our study

did not have any cases of ERCP stone removal, or only cholecystectomy alone because the study subjects of this study evaluated the treatment results mainly based on the damage to the gallbladder. Intraoperative macroscopic injury of the pancreas and biliary tract, so laparoscopic stone removal or laparoscopic cholecystectomy will not evaluate the pancreas. Most of the intervention cases <48 hours (73.5%), postoperative had better results. In our study group, 49 patients with acute pancreatitis due to gallstones had 35 patients (71.4%) open surgery and 14 patients (28.6%) laparoscopic surgery, all of which were evaluated for damage. Intraoperative pancreatic injury with gross damage was mainly acute pancreatitis with edema but only 8 patients (16.3%) required pancreatic intervention.

Choledochotomy to remove stones, endoscopic lithotripsy with Kehr drainage is the method applied in all cases, in which open surgery accounted for 71.4% higher than laparoscopic surgery 28.6%. Choledochotomy alone had 32 patients (65.3%), in which indication for open surgery was 22/32 patients (68.7%) higher than laparoscopic surgery 10/32 patients (31.3%). Choledochotomy associated with cholecystectomy had 7/49 patients (22.4%) of which open surgery was 63.6%, laparoscopic surgery accounted for 36.4%. Choledochotomy associated with left lobectomy, possibly accompanied by cholecystectomy, had 6/49 patients (12.3%) and was only seen in open surgery. The advantages of laparoscopic surgery has increased the ability of surgeons and reduced complications in open surgery [5][7]. However, laparoscopic surgery has certain limitations as it can be applied only in cases where the patient has first surgical intervention and has only choledocholithiasis, or may be gallbladder stones but absolutely no gallstones in the liver [3].

Early complications after surgery only encountered 5/49 patients (10.2%) in which wound infection occurred in 2/5 patients, accounting for 4.1% of the total number of patients, but compared with the number of patients with complications, it was 40%. This complication was seen in open surgery and occured at the time of surgery < 2 days [3].

Biliary leakage is one of the common complications in patients with biliary interventions in general [4]. In our study, we encountered 2 patients with biliary leakage, accounting for 4.1%. Both of these cases had biliary leakage through the placement site of subhepatic drainage, resolved spontaneously and discharged after 13 and 14 days, respectively.

Acute progress pancreatitis has 1 case with the indication for surgery is acute necrotizing pancreatitis with common bile duct stones, gallstones indicated for open cholecystectomy, Cholodochotomy to remove stones, endoscopic lithotripsy, drainage Kehr, accompanied by pancreatotomy to remove the necrotic tissue, drainage of lesser sac at the time of intervention for 5-7 days. After 3 days of surgery, the patient showed signs of fever, respiratory failure, abdominal bloating and pain, and drainage of lesser sac discharged black fluid mixed with thin blood. The patient was transferred to resuscitation, ultrasound showed an increase in size of the pancreas, necrosis of the pancreas tail, therefore, was indicated for intensive resuscitation treatment and intravenous feeding. After 24 days if the patient was stable, the drainage did not discharge any more so the patient was discharged from the hospital.

We did not encounter any case of postoperative intestinal obstruction, severity or death.

Conclusions

Surgical treatment for patients with acute biliary pancreatitis is a safe and effective method, which can eliminate the cause of gallstones as well as probe and treat lesions on the pancreas that intervention methods such as ERCP can't do it. Laparoscopic surgery has a lower complication rate, and the postoperative outcome is more stable, but the indications are still limited.

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