

## CASE REPORT

# A Successful Early Laparoscopy Cholecystectomy in Mild Gallstone Pancreatitis: Case Report

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### ABSTRACT

Gallstone pancreatitis is the most common cause of acute pancreatitis worldwide with 40-70% of cases. However, only 3-7% of patients with gallstones develop pancreatitis with the major cause dyslipidemia. The management of acute pancreatitis is supportive, but the definitive treatment for gallstone pancreatitis is laparoscopic cholecystectomy (LCC). Several clinical trials have been performed to evaluate optimal timing between early or delayed LCC in mild gallstone pancreatitis. Early LCC is performed within the period of hospital admission or within 2 weeks after discharge. This is a case report of a young woman, 29 years old who had a mild case of gallstone pancreatitis with a history of familial dyslipidemia and chronic alcoholism. This case showed successful of early LCC that performed on 10th day of hospitalization. The treatment shortened hospital stay with no intra or post-operative complication, improving the pancreatic enzyme level and reduced readmission caused by recurrent pancreatitis.

**Keywords:** Young woman, Mild gallstone pancreatitis, Familial dyslipidemia, Alcoholism, Early laparoscopic cholecystectomy

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### INTRODUCTION

The incidence of acute pancreatitis has increased significantly worldwide > 30% over the last two decades due to increasing occurrence of obesity and gallstones (1). Gallstone is the highest risk factor for acute pancreatitis with prevalence of 40-70% (1,3), while other causes include infection, dyslipidemia, chronic alcohol, smoking, autoimmunity, familial and hereditary (1,2). Most acute cases resolved completely with supportive treatment, although some cases leads to serious illness that require intensive treatment (2). The major cause of gallstones are impaired metabolism of cholesterol, bilirubin and bile salts (2).

Although gallstone pancreatitis is the highest risk factor of acute pancreatitis, only 3-7% of patients with gallstone develop pancreatitis. Other factors that induce gallstone pancreatitis are bile reflux, pancreatic duct edema during the passage of gallstone due to transient obstruction of the ampulla of Vater and ampulla obstruction caused by secondary stone (2). Pancreatitis will recur when a migrating stone or ampulla obstruction is not removed. The diagnosis of gallstone pancreatitis is based on severe, sudden, and persistent epigastric pain that might radiate throughout upper abdomen and back, accompanied by a 3 times rise in serum pancreatic amylase-lipase enzyme,

abdominal ultrasound and computerized tomography (CT) show inflammation of the pancreas and gallstone that fulfilled Revised Atlanta Classification. There are classifications can be used to evaluate severity of the disease namely Modified Ranson's Criteria, Modified Glasgow Imrie Severity Criteria Acute Pancreatitis (2). The Modified Ranson Criteria are used to assess acute pancreatitis. Five parameters are age > 70 years, WBC > 18.000 cells/mm<sup>3</sup>, blood glucose > 220 mg/dL 2, serum AST > 50 IU/L, and serum LDH > 400 IU/L. Ranson score 0-1 predicts mild acute pancreatitis but score > 3 predicts severe acute pancreatitis. Meanwhile Modified Glasgow Imrie Severity Criteria Acute Pancreatitis is determined by assigning one point for each criteria such as PaO<sub>2</sub> <8kPa, age >55yrs, WBC >15000 cell/mm<sup>3</sup>, calcium <2mmol/L, urea >16mmol/L, LDH >600 IU/L, AST >200 IU/L, albumin <3.2 mg/dl, blood glucose >180 mg/dl. Mild/moderate pancreatitis if points < 3 and severe pancreatitis if points > 3.

Laparoscopic cholecystectomy (LCC) is the definitive treatment for mild gallstone pancreatitis. Guidelines recommend cholecystectomy in an early setting, on index admission, or within 2 weeks of discharge but only 10% underwent definitive treatment within 2 weeks (4,5). These might be due to the perceived risk of surgery complications that early LCC might escalate inflammation and oedema in acute pancreatitis or distort biliary anatomy (4). Therefore, this case report aims to describe a successful early LCC in mild gallstone pancreatitis.

## CASE REPORT

A young woman, 29-year-old came to the emergency department in a tertiary hospital with chief complaints of severe and sudden epigastric pain since 1 day ago accompanied by fever, nausea, vomiting and abdominal colicky pain three times since one week ago. There were also a history of dyslipidemia since 3 years ago and a history of familial dyslipidemia. The patient also consumes alcohol 1-2 times a week and 1 pack of cigarettes per day. There was no history of gallstones, pancreatitis, or autoimmune disease. Physical examination showed fully conscious, blood pressure 110/70 mmHg, temperature 38.2°C, pulse rate 88 BPM, respiratory rate 20 CPM, and oxygen saturation 98%. The eye examination showed normal conjunctiva and sclera. There was no abnormality in the pulmonary and cardiovascular examination results. Based on the abdominal examination, there were epigastric tenderness with positive bowel sounds, while there were normal spleen, liver, Cullen's, Gray Turner's, and Murphy's sign were negative.

Laboratory examination showed Hb 12.7 g/dl, leukocytes 8380/uL, and platelets counts 189000/uL. There was an increase in serum amylase 2126 U/L, lipase 25237 U/L, AST 895 U/L, ALT 1284 U/L, gamma-glutamyl transferase of 374 U/L, alkaline phosphatase 345 U/L, lactate dehydrogenase 471 U/L, and decreased potassium serum 3.1 mmol/L. Moreover, there was an increase in cholesterol 201 mg/dl, LDL 136 mg/dl, as well as normal HDL and IgM anti HAV non-reactive. The blood sugar, kidney function, albumin, direct bilirubin, arterial blood gases, and calcium were within normal limits. There was no abnormality in the chest X-ray and ECG results.

Abdominal ultrasound (US) examination showed increased echogenicity of the liver, intra and extra-hepatic ducts were not dilated. The gall bladder wall thickened and multiple small stones were found with the largest diameter < 7.3 mm. The pancreas head was enlarged but the other areas were still normal, as shown in Fig. 1 and Fig. 2. Magnetic resonance cholangiopancreatography (MRCP) examination showed signs of mild to moderate fatty liver with a slightly contracted gall bladder and partially thickened walls of +/- 6.4 mm, multiple intravesical lithiasis with the largest diameter 5.13 mm. There was also mild enlargement of the intra and extrahepatic bile ducts to the distal common bile duct (CBD) with partial obstruction in the distal area of the CBD due to cicatrix formation but no stones in the distal CBD. Furthermore, an enlargement of the pancreas was observed in the head area +/- 28 mm, and tail +/- 33 mm, as shown in Fig.3 and Fig. 4.

Acute pancreatitis was confirmed by fulfilled all 3 criteria of the Revised Atlanta Classification, the Ranson's and Glasgow criteria was scored 1, respectively. The case



Figure 1: Gallbladder in Abdominal Ultrasound (US)

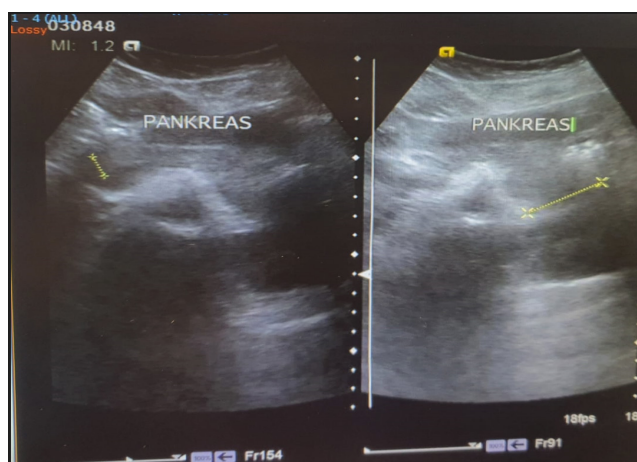
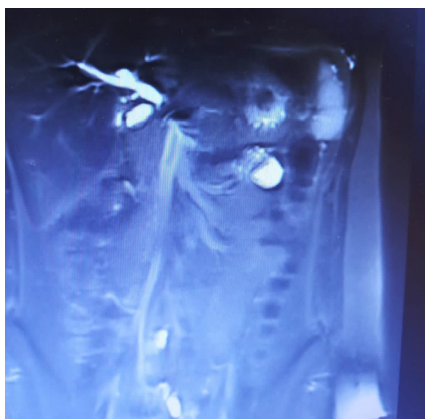


Figure 2: Pancreas in Abdominal Ultrasound (US)



Figure 3: Pancreas in Magnetic Resonance Cholangiopancreatography (MRCP)

was concluded to be mild acute gallstone pancreatitis, while the differential diagnosis was cholecystolithiasis. The patient was asked to fast and treated with Ringer's lactate infusion of 2500 cc/24 hours and parenteral nutrition. Other treatment were antibiotic levofloxacin 1x 750 mg iv, esomeprazole 2x 40 mg iv, and antagonist serotonin (granisetron) 3x3 mg iv. On day 3, the epigastric pain subsided, nausea, vomiting, and fever



**Figure 4: Biliary tract in Magnetic Resonance Cholangiopancreatography**

relieved with a decrease in amylase 398 U/L, lipase 2794 U/L, and patient started with oral nutrition. After the 5th day, the pain subsided and the liver function improved, amylase level was normal 157 U/L, and but lipase level was 1387 U/L. Consequently, the patient was asked to undergo LCC to remove the gall bladder and gallstones on the 10th day of admission when the lipase level was close to a normal range of 555 U/L. The patient was discharged on the 12th day of admission with no residual pain, no post-operative complication, healed wound condition, normal pancreatic enzyme level, and a normal appetite. Based on the operative report, there were yellow-green stones indicating cholesterol stone.

## DISCUSSION

The patient had mild acute gallstone pancreatitis with a risk factor of dyslipidemia, chronic alcohol consumption and smoking (1). This is in line with studies which showed that pancreatitis is more common in women (1,2). Krishna et al. found a 3-fold increase in this disease in patients with metabolic syndrome (3). Besides, alcohol-induced pancreatitis ranks second in the world among all acute pancreatitis by 20.4% (1). Smoking is an independent risk factor for pancreatitis. Study showed that smoking and alcohol cause changes in acinar cells associated with pancreatic zymogen secretion (3). The patient had biliary colic since 1 week ago, consistent with studies reported that gallstone pancreatitis is often preceded by biliary colic. Moreover, the patient had a history of alcohol consumption 2 days before symptoms appeared. A previous study reported that symptoms occurred around 3 days after drinking alcohol.

The laboratory examination, abdominal US and MRCP confirmed mild gallstone pancreatitis. Supportive treatment was given, and the patient asked to fast until the pain, nausea and vomiting reduced, then changed to step up oral nutrition. The patient underwent early LCC on day 10th of hospitalization. LCC is the gold standard procedure for gallstone treatment in tertiary hospitals. It is a minimally invasive procedure for the removal of gallbladder and gallstone. The laparoscope and long

instruments are used to remove the gallbladder from the abdomen in a specimen pouch. Complications include bleeding, infection, and damage to the surrounding structure, although it is rare complication. Severe complication is an iatrogenic injury of CBD or hepatic duct. Open cholecystectomy is an alternative in primary or secondary hospitals which do not have laparoscopic facilities (4,5). There are some complications of gallstone pancreatitis including cholangitis, pancreatic necrosis, pseudocyst, chronic pancreatitis, also systemic complication such as sepsis, and kidney failure (3,4).

The chief complaints relieved and pancreatic enzymes were normal then patient discharged on the 12th day in good condition. The American Gastroenterology Association (AGA) and British Society of Gastroenterology recommend that LCC should be performed within the period of hospitalization or within 2 weeks after discharge. Early LCC correlates with lower length of hospital stay, decreases re-admission caused by recurrent pancreatitis, and reduces overall usage of Endoscopic Retrograde Cholangiopancreatography (ERCP) due to biliary duct stone. Delayed LCC is defined as the treatment conducted more than 6 weeks after admission (5).

## CONCLUSION

This case report was mild acute gallstone pancreatitis in a young woman caused by a history of chronic alcohol and familial dyslipidemia. This case report showed the successful early LCC treatment which performed on the 10th day of hospitalization. Early LCC was proven to be safe, effective, shortened hospital stays, reduced the occurrence of re-admission caused by recurrent pancreatitis, moreover also showed no postoperative complication, no residual pain, healed wound and normal pancreatic enzyme.

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