

Case Report:

Ascending Cholangitis Secondary to Choledocholithiasis In Post Cholecystectomy Patient: A Diagnostic Dilemma

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Abstract

Choledocholithiasis is the presence of stones in the common bile duct (CBD). Choledocholithiasis in post-cholecystectomy is rare. Nonetheless, this is a report of a 40-year-old woman who was presented with severe epigastric pain with high-grade fever, tea-coloured urine, pale stool, and jaundice. She had a history of pangastritis and had cholecystectomy two years ago. This case report describes the significant diagnostic dilemma of the choledocholithiasis, particularly in a post-cholecystectomy patient who had pangastritis and was presented with severe epigastric pain. The diagnosis of choledocholithiasis was missed as the early symptoms of choledocholithiasis are similar to those of pangastritis. Therefore, treatment for choledocholithiasis was delayed. A high index of suspicion for diagnosis of choledocholithiasis must be emphasized among primary care practitioners even in a post-cholecystectomy patient. This will enable early treatment for the patient and prevent complications such as ascending cholangitis and sepsis.

Keywords: Common bile duct; ascending cholangitis; choledocholithiasis; cholecystectomy; pangastritis.

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Introduction

Ascending cholangitis (AC) is a bacterial infection of a bile duct system due to biliary obstruction. The duodenum is the typical source of ascending organism to the bile duct system while hematogenous spread from portal vein is a rare source of infection.¹The classical clinical triad presentation of acute cholangitis, namely the Charcot's triad is a combination of right hypochondriac pain, jaundice, and fever. Even so, patients have been known to be presented with shock and altered consciousness (Reynolds pentad). Literature have shown that in

the early stages of the disease, most patients will not be presented with this triad. Rather, the triad of symptoms appear later as the disease progress.² For this reason, a diagnosis of common bile duct(CBD) stone and AC is challenging.

Epigastric pain and dyspepsia, which recur and/or persist after cholecystectomy is referred to as post-cholecystectomy syndrome (PCS). PCS is further divided into early and late onset based on the duration of the symptoms. Early onset of biliary manifestation of PCS usually occur during post-operative period because of the retained calculi in the

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cystic duct remnant or in the CBD due to incomplete surgery. Operative complications, such as bile duct injury and/or bile leakage are also factor to the early onset of PCS. Late onset of PCS occurs after months or years is normally due to biliary stasis that may happen because of inflammatory scarring strictures involving the sphincter of Oddi or the CBD, recurrent calculi or biliary dyskinesia.³ There are few cases that had been reported on recurrent biliary stone postcholecystectomy such as post-cholecystectomy mirizzi syndrome and septic shock due to biliary stone in a post-cholecystectomy patient.^{4,5}

Case Summary

A 40-year-old woman who had underlying pangastritis and a surgical history of laparoscopic cholecystectomy two years ago, presented with 10 days history of intermittent severe epigastric pain after eating biryani rice. The pain was persistent and became more severe in the past two days. It was associated with high grade fever, jaundice, nausea and vomiting. The pain was constant, sharp, burning, and extremely painful (with pain intensity score of nine out of 10), radiating from the epigastrium to the whole abdomen and both scapula region. The pain worsened when the patient ate or lying down. Efforts to relieve the pain by pantoprazole 40mg tablet taken twice daily, tramadol 50mg tablet taken twice daily, and gaviscon syrup were futile. The patient also had a history of tea-coloured urine and pale stool for five days prior to admission.

Five months prior, she had a frequent attack of severe epigastric pain that was radiated to both scapula region almost every month especially after taking fatty food such as curry and oily food. Her symptoms was resolved with intravenous pantoprazole and fentanyl. She was referred to a gastrology team and oesophagogastroduodenoscopy (OGDS) was performed to reveal an erosive oesophagitis and pangastritis. Consequently, each time she experienced similar symptoms, she was treated as if she had pangastritis and was discharged with a prescription of pantoprazole tablet without further investigation.

On examination, she was in pain and had jaundice. Her blood pressure was 85/60 mmHg, pulse rate was 120 beats/minute, and temperature was 39.5°C. Her abdominal examination revealed tenderness

over the epigastric area with guarding. The initial investigations results revealed white blood cells was at $10.7 \times 10^9/L$, hemoglobin 10.3g/dL, platelets $151 \times 10^9/L$, international normalized ratio (INR) 1.18, albumin 42 g/dL, total bilirubin 199 $\mu\text{mol/L}$, direct bilirubin 145 $\mu\text{mol/L}$, alkaline phosphatase 380 U/L, aspartate aminotransferase 235 U/L, alanine aminotransferase 522 U/L, and serum amylase 35 U/L. Her renal function test results were normal. She was immediately referred for an urgent hepatobiliary system ultrasound and the findings revealed a dilated intrahepatic, extrahepatic duct and CBD measuring about 1.1cm with no calculous or intraductal mass seen as shown in Figure 1. She was then diagnosed with a septic shock secondary to ascending cholangitis due to a distal CBD stone.

Emergency salvageable endoscopic retrograde cholangiopancreatography (ERCP) was performed which revealed a bulging ampulla and a dilated CBD measuring approximately 1.5cm with multiple small stones at the distal CBD. Stent was inserted and a purulent bile was noted. Her purulent bile was sent for culture and sensitivity showed klebsiella pneumonia and blood culture result showed no growth. Another ERCP appointment was set up two months following the removal of stone and stent from the CBD.

Discussion

Cholecystectomy is the gold standard definitive treatment for gallstone. However, biliary stone post cholecystectomy is a rare occurrence. Prevalence of retained CBD stones after laparoscopic cholecystectomy (LC) for symptomatic cholelithiasis without evidence of the CBD stones in preoperative and post operative workup was 1.84%. The duration from LC to clinical presentation ranged between two months to two years and nine months. Post operative formation of the CBD stone in patients without preoperative evidence can be explained through several mechanisms. The stones can migrate from the GB in between the time for preoperative imaging and surgery. The stones can also migrate during operative manipulation. Asymptomatic radiolucent stones in CBD are known to sometimes be undetected by CT scan. Diagnosis of CBD stones can be a missed during preoperative ultrasound as they can be obscured by colonic gas or fatty tissues in obese patients. There

is also a possibility due to by gallbladder anatomical anomaly as reported by Ozsoy et al., 2018.⁶

All the more so when the evidence of a bile duct dilatation and liver function test abnormalities were not present. The cause for latter is normally due to a new primary CBD stone developed during the postoperative period. Most patients with retained CBD stone post LC were presented with abdominal pain (74.1%), followed by fever (55.6%), jaundice (22.2%), abnormal liver function (11.1%), and abdominal ultrasound or CT scan abnormalities (3.7%). CBD stone complications include ascending cholangitis/acute cholangitis (62.9%), obstructive jaundice (22.2%) and acute pancreatitis (11.1%).⁷

AC is a life-threatening complication of biliary obstruction if diagnosis and treatment were delayed. The most common cause of cholangitis is choledocholithiasis.² Charcot's triad symptoms of fever, abdominal pain, and jaundice is a well-known clinical triad for AC. However, most patients presented early with the symptoms exhibited subtle symptoms of fever (with or without rigors) and without jaundice making the diagnosis is difficult. Nonetheless, patients who presented late with the triad of symptoms went into septic shock at the time of diagnosis.² Thus, choledocholithiasis should be considered even in post-cholecystectomy patients especially when they were presented with abdominal pain.⁵ In this case, the patient who had her gallbladder removed two years ago, was presented with recurrent severe epigastric pain. However, due to the undiagnosed choledocholithiasis, the patient later developed an acute cholangitis and septic shock.

Epigastric pain was reported to occur in 15% and 25% of the population in the rural and urban area in Malaysia, respectively.⁸ Gastroesophageal reflux, medications, functional dyspepsia, peptic ulcer disease, malignancy, pancreatic or hepatobiliary tract disease, intestinal angina, irritable bowel syndrome, and hernia are all possible cause of epigastric pain.⁹ In this case, because of the patient had a history of laparoscopic cholecystectomy and pangastritis, the diagnosis of choledocholithiasis was delayed. In managing such cases as this, primary care physicians have the tendency to disregard or missed the diagnosis of choledocholithiasis entirely especially

if the patient have already undergone laparoscopic cholecystectomy, which is what happened to this patient. The OGDS also confirmed that she had pangastritis causing the managing team in the primary care or emergency unit to continue treating the patient with analgesia and proton pump inhibitor without any further investigations. Emergency department or primary health care should also consider intravenous(IV) paracetamol as an early pain management in a recurrent epigastric pain to reduce demand and requirement of high dose opioid, thus reduce the opioid side effect as it was proven that early intervention with IV paracetamol had reduce consumption of opioid in post laparoscopic cholecystectomy patients.¹⁰

Earlier diagnosis of choledocholithiasis can be done by doing ultrasound hepatobiliary system and biochemical liver function test when the patient was presented with early symptoms of choledocholithiasis. Minor elevation of liver function test parameter particularly the alkaline phosphatase and alanine aminotransferase shows significantly correlates with the presence of CBD stones. In addition, the ultrasound finding of the dilated CBD (55% sensitivity, 75% specificity) and the dilated intrahepatic duct (sensitivity 63%, specificity 72%) were significant predictors of CBD stones although only 37% of choledocholithiasis patients will show a dilated CBD.¹¹

Conclusion

Choledocholithiasis in a post-cholecystectomy patient is an uncommon and challenging diagnosis not only to the primary care physicians but also to the emergency physicians and surgeons especially in patients with double pathology in the abdomen such as pangastritis and choledocholithiasis. Therefore, early ultrasound hepatobiliary system and biochemical liver function test are the suggested investigational option to be used in primary care setting to obtain an early diagnosis. Patients can then be quickly referred for further expert evaluation and begin the necessary treatment to prevent undesirable complications.

Ethical clearance:

This case report was ethically approved.

Conflict of Interest

The author has no conflict of interest to declare.

Consent

Informed consent was obtained from the patient for publication of this case report and accompanying images.

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Author's contribution:

Data gathering and idea owner of this study: Mohd Najman **AW**, Noraini **M**, Rosediani **M**, Nani **D**

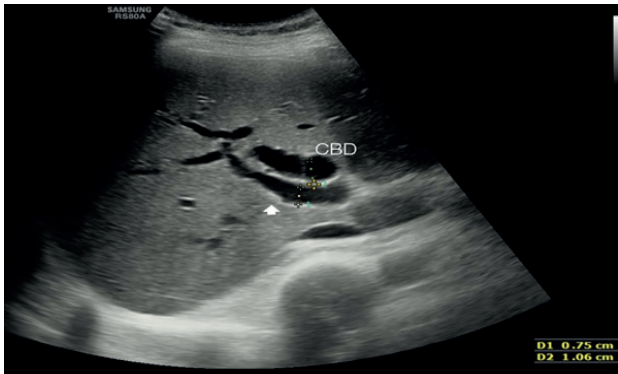
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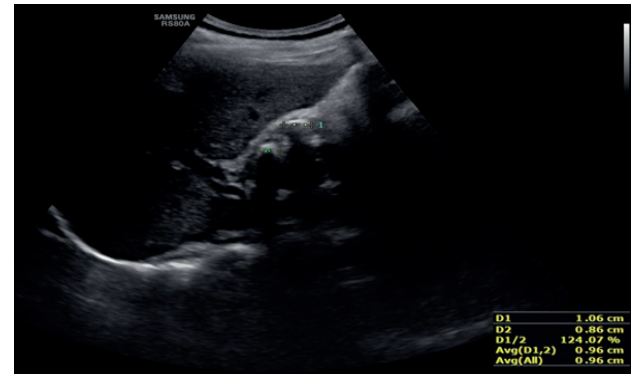
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Figure 1: Latest ultrasound hepatobiliary system, 2 years after cholecystectomy revealed double barrel



sign of dilated common bile duct with no obvious stones.

Figure 2: Ultrasound hepatobiliary system pre-



cholecystectomy 2 years ago revealed multiple gallstones



Figure 3: Ultrasound hepatobiliary system pre cholecystectomy 2 years ago revealed common bile duct is not dilated

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