

Case Report

Choledocholithiasis with hepatolithiasis: spontaneous passage of a string of pearls

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ABSTRACT

Choledocholithiasis is known to pass spontaneously in a large proportion of patients. This case report documents extensive choledocholithiasis and hepatolithiasis presenting as gallstone pancreatitis in a 37-year-old female. All ductal stones (>15 stones measuring up to 10 mm) had passed spontaneously at the time of endoscopic retrograde cholangiopancreatography, 10 days after presentation. No previous case reports document this number, size and location of ductal stones passing spontaneously.

Keywords: Choledocholithiasis, Gallstones, Endoscopic retrograde cholangiopancreatography, Jaundice, Pancreatitis

INTRODUCTION

Choledocholithiasis is defined as gall stones within the common bile duct (CBD) and affects up to 20% of patients with cholelithiasis.¹ These may pass through the cystic duct from the gall bladder, form within the CBD or pass from the intrahepatic ducts.² Hepatolithiasis is characterised by stones proximal to the confluence of the hepatic ducts.² These stones can form within the hepatic ducts (common in East Asia) or pass from the gall bladder (rare, but more common in western countries).² Nonsurgical treatments including endoscopic retrograde cholangiopancreatography (ERCP) are being used with increasing frequency, for the management of both choledocholithiasis and hepatolithiasis.^{3,4}

CASE REPORT

A female in her 30's presented to the emergency department with a two-day history of epigastric pain, nausea, vomiting and fevers. Her history was significant

for known cholelithiasis. Examination revealed fever, hypotension and epigastric tenderness. Serum white cell count was $27.5 \times 10^9/l$, serum lipase was 2000 U/l and serum bilirubin was 29 (total); 16 (conjugated) $\mu\text{mol/l}$. Computed tomography (CT) showed >15 gall stones measuring up to 10 mm throughout the CBD, as well as the common, right and left hepatic ducts – resembling a string of pearls (Figure 1). She was diagnosed with gallstone pancreatitis.

The pancreatitis settled clinically and biochemically. Bilirubin normalised over the four days following presentation. She was transferred to a tertiary hospital. ERCP 10 days after presentation, showed a dilated CBD up to 15mm but no CBD stones (Figure 2). A biliary sphincterotomy was performed and the biliary tree was swept. No stones were found. A temporary stent was placed.

She underwent an uncomplicated laparoscopic cholecystectomy and was discharged the following day.

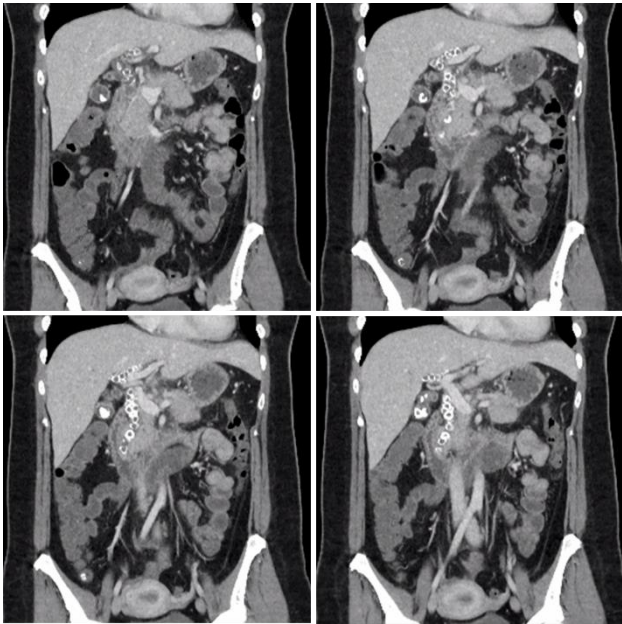


Figure 1: Computed tomography coronal views showing choledocholithiasis with hepatolithiasis – a string of pearls.

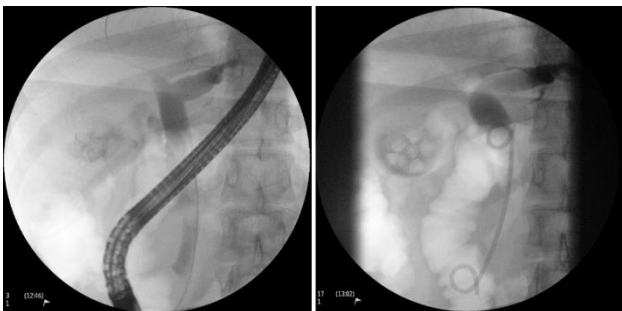


Figure 2: ERCP 10 days after initial imaging – no evidence of choledocholithiasis.

DISCUSSION

This case documents extensive choledocholithiasis and hepatolithiasis in a young female patient. The burden of CBD and hepatic stones had not been seen previously in the author's institution. To the author's knowledge, spontaneous passage of this degree of choledocholithiasis and hepatolithiasis has not previously been documented.

Ductal stones pass spontaneously in large proportion of patients.^{5,6} A retrospective study showed more than half of patients with obstructive jaundice secondary to choledocholithiasis, passed their CBD stones spontaneously.⁶ In a prospective study of patients undergoing elective laparoscopic cholecystectomy, a quarter of non-jaundiced patients with unexpected CBD stone(s) passed the stone(s) by 6 weeks post operatively.⁵ There was no relationship between spontaneous passage and size or number of calculi.⁵ Despite this, no clear

guidelines exist for the expectant management of choledocholithiasis.

ERCP is commonly employed for removal of CBD stones, however 17-57% of ERCPs done for this reason are negative.⁷ Increasing interval between pre-ERCP imaging and ERCP results in increasing proportion of negative ERCPs, suggesting some patients pass their CBD stones whilst awaiting ERCP.⁷ Whilst a proportion of patients with CBD stones develop gallstone-related complications (including cholangitis and pancreatitis) whilst awaiting ERCP, the risks of ERCP (including pancreatitis, cholangitis, bleeding and perforation) must be considered.⁷

CONCLUSION

This case demonstrates even extensive choledocholithiasis with hepatolithiasis may pass spontaneously. Further studies are warranted to determine if a period of expectant management is safe and effective for select patients with choledocholithiasis (with or without hepatolithiasis). This may reduce the rate of unnecessary ERCP, thereby reducing the number of patients exposed to the potential complications. However, this must be balanced with the risk of developing gallstone-related complications whilst waiting for a stone to pass.

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Ethical approval: Not required

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