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26th Annual Research Day

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May 5th, 12:00 AM

# A Case Report of Suspected Choledocholithiasis 20 Years After Cholecystectomy

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Memon, Maleeha; Rana, Dhara; Patel, Chandni; LeRoy, Christine; and Sheth, Bijal, "A Case Report of Suspected Choledocholithiasis 20 Years After Cholecystectomy" (2022). *Rowan-Virtua Research Day*. 2. [https://rdw.rowan.edu/stratford\\_research\\_day/2022/May5/2](https://rdw.rowan.edu/stratford_research_day/2022/May5/2)

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## INTRODUCTION

Gallstones are a common prevalence in western societies where approximately 15% of Americans have gallstones. The mainstay treatment for symptomatic cholelithiasis is laparoscopic cholecystectomy. It is estimated approximately 650,000 to 700,000 cholecystectomies are performed every year. Most patients feel relief after a laparoscopic cholecystectomy, but a small number of patients experience post-cholecystectomy syndrome, which presents as biliary colic pain. Although the pathophysiology of the post-cholecystectomy syndrome is unclear, one theory proposes that it is due to the alteration in bile flow after the removal of the gallbladder, which serves as a reservoir for bile. This bile is thought to be the main trigger in patients with mild gastroduodenal symptoms or diarrhea. The lack of bile reservoir can furthermore create a nidus for de novo biliary stone formation, and can cause choledocholithiasis. There have been only a few case reports of post-cholecystectomy bile duct stones occurring more than 10 years following surgery in literature. Most of these reports describe the presence of stones within the gallbladder/cystic duct remnant or secondary to migrating surgical clips. We report a suspected case of choledocholithiasis 20 years following open cholecystectomy secondary to a primary biliary stone.

## CASE REPORT

A 46-year-old morbidly obese female with a past surgical history of open cholecystectomy more than 20 years ago presented to the emergency department (ED) with abdominal pain, nausea and nonbilious, nonbloody vomiting for about one week, after eating steak at a restaurant. Abdominal pain was described as constant, non-radiating right upper quadrant pain, 10/10 in severity, worsened by oral intake. On initial presentation, labs and CT abdomen and pelvis showed no abnormalities. She was diagnosed with a urinary tract infection and discharged home.

Later in the week, patient returned to the ED for evaluation given continued symptoms. On physical exam, the patient was afebrile and hemodynamically stable. Repeat labs now showed elevated lipase (5,032 unit/L), AST (185 unit/L), ALT (76 unit/L), elevated alkaline phosphate (207 unit/L), total bilirubin (1.7 mg/dL), lactic acid (1.4 mmol/L) with no leukocytosis or elevated triglycerides. Given the new onset elevations in liver function enzymes and lipase, acute pancreatitis was suspected.

Ultrasound demonstrated common bile duct dilation (CBD) to 16 mm, fatty liver, and mild intrahepatic ductal dilation. CT abdomen was consistent with cholecystectomy, but demonstrated no peripancreatic inflammation to suspect pancreatitis, no splenomegaly, no bowel obstruction or perforation, and no free air. MRCP confirmed the CT abdomen results, notable for mildly distended CBD to 1 cm, no pancreatic ductal dilation, no evidence of cholelithiasis, no significant peripancreatic inflammation to suspect acute pancreatitis. During the hospital course, the patient's lipase and liver enzymes improved with results of AST (18 unit/L), ALT (33 unit/L), total bilirubin (0.4 mg/mL) and lipase (169 unit/L).

The patient was managed symptomatically for her pain, nausea, and vomiting. She was also treated with ursodiol 300 mg twice daily and pantoprazole 40 mg daily. Patient's diet was advanced slowly, which she tolerated well. In conjunction with gastroenterology input, ERCP was deferred, as no stones were noted on MRCP. However, given the significant symptoms, initial ductal dilation and laboratory abnormalities, it was suspected that the patient had a stone which likely spontaneously passed. Seven days after discharge the patient reported feeling well without any pain, fever, or nausea.

## DISCUSSION

Post-cholecystectomy syndrome (PCS) is the term used to describe persistence of right upper quadrant pain associated with gastrointestinal symptoms, including biliary colic, fever, jaundice, diarrhea or nausea. Our patient presented similarly, with right sided abdominal pain, nausea and nonbilious, nonbloody vomiting. Plausible reasons for her presentation include the presence of retained stones within the gallbladder or cystic duct remnant, migrating surgical clips, de novo stone formation or primary microlithiasis which can be missed on traditional imaging tests, choledocholithiasis, or sphincter of oddi dysfunction. Given her lab and imaging findings, we suspect primary stone formation with subsequent stone passage. Ursodeoxycholic acid, frequently used for the management of PCS to prevent stone recurrence, was initiated. Most cases of PCS occur within the first three years after surgery, and thus we present a rare occurrence of post-cholecystectomy bile duct stones twenty years after open cholecystectomy.