CASE REPORT

Symptomatic cholecystolithiasis after cholecystectomy

Paul M E L van Dam,¹ Shandrich M Alexander,² Ellen Degreef,³ Jan M J I Salemans,⁴ Rudi M H Roumen²

¹Department of Internal Medicine, Maxima Medisch Centrum, Veldhoven, Netherlands

²Department of Surgery, Maxima Medisch Centrum, Veldhoven, Netherlands

³PAMM Laboratory for Pathology, Eindhoven, Netherlands

⁴Department of Gastroenterology, Maxima Medisch Centrum, Veldhoven, Netherlands

Correspondence to

Paul M E L van Dam,
p_vandam@live.nl

SUMMARY

A 43-year-old woman was admitted to the gastroenterology department with colicky pain in the upper abdomen. Four years earlier, she had undergone a laparoscopic cholecystectomy because of cholecystitis. She recognised her current complaints from that previous episode. An endoscopic retrograde cholangiopancreatography showed a cavity with a diameter of 2 cm which contained multiple concretions near the liver hilus. An elective surgical exploration was performed. Near the clip of the previous cholecystectomy a bulging of the biliary tract with its own duct was visualised and resected. Histological examination of this "neo" gallbladder showed that the bulging was consistent with the formation of a reservoir secondary to bile leakage, probably caused by a small peroperative lesion of the common bile duct during the previous cholecystectomy. In conclusion, our patient presented with colicky pain caused by concretions inside a 'neo' gallbladder.

BACKGROUND

We present a patient who had colicky pains in the upper abdomen caused by concretions inside a 'neo' gallbladder, a reservoir which was formed secondary to bile leakage after a previous cholecystectomy. After a thorough search of the literature we found no cases that were similar to ours.

We wrote this case report because it is a unique medical problem. Some patients continue to have abdominal pain after cholecystectomy. In this group of patients the presence of a 'neo' gallbladder should be considered.

CASE PRESENTATION

A 43-year-old woman was admitted to the gastroenterology department with colicky pain in the right upper abdomen, radiating to the right shoulder. The pain was mostly present after a meal and lasted for about 1 h. She also complained of nausea and vomiting and experienced pyrosis occasionally. Four years earlier, she had undergone a laparoscopic cholecystectomy because of cholecystitis. She recognised her complaints from that previous episode. Her further medical history was unremarkable. Apart from naproxen for her abdominal pain she used no other drugs.

Except for pain in the epigastric region and scars from the laparoscopic cholecystectomy she had no abnormalities during physical examination.

INVESTIGATIONS

Routine laboratory testing was performed. Moderately raised liver enzymes were found: total bilirubin 10 µmol/l (<17), alkaline phosphatase 97 U/l (40–120), γ-glutamyltransferase 310 U/l (<55), aspartate aminotransferase 27 U/l (<35), alanine aminotransferase 279 U/l (<45), lactate dehydrogenase 270 U/l (<250) and amylase 71 U/l (<100).

An endoscopic retrograde cholangiopancreatography was performed. The common bile duct was cannulated. When the contrast fluid was injected, the intrahepatic biliary tract showed no dilatation, but close to the liver hilus a cavity was seen with a diameter of 2 cm which contained multiple concretions (figure 1). In view of this finding, we suspected the presence of a duplicate gallbladder connected to the common bile duct by its own duct.

DIFFERENTIAL DIAGNOSIS

Differential diagnosis included choledocholithiasis (or a passed bile stone), peptic ulcer disease, intestinal colic or cholecystolithiasis in an accessory gallbladder.

TREATMENT

A surgical exploration of the biliary tract was performed. Cranial to the clip of the previous cholecystectomy a bulging of the bile duct was seen, which was connected to the common bile duct with its own duct (see figures 2 and 3). This 'neo' gallbladder contained multiple concretions. It was resected and sent for histological examination. The postoperative period was uneventful.

OUTCOME AND FOLLOW-UP

Histological examination showed that the 'neo' gallbladder was consistent with a reservoir formed secondary to bile leakage from the cystic duct. The histological image was not similar to the normal architecture of a gallbladder (see figure 4). There were no signs of dysplasia or malignancy.

After discharge from the hospital the pain in the right upper abdomen had disappeared. The postoperative follow-up was unremarkable.

DISCUSSION

We present a patient with a very unusual medical problem. She presented with colicky pain in the upper abdomen caused by concretions inside a 'neo' gallbladder, a reservoir which was formed

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ERCP: a cavity in the liver hilum with multiple concretions

Figure 1 An image obtained during endoscopic retrograde cholangiopancreatography (ERCP). It shows a cavity close to the liver hilum with a diameter of two centimetres which contains multiple concretions.

secondary to bile leakage after a cholecystectomy that had been performed 5 years earlier.

Gallbladder anomalies are relatively rare and are usually found post mortem. The presence of a double or accessory gallbladder is found in about 1 in 4000 cases at autopsy.¹ There are even some reported cases of a gallbladder triplication.² These anomalies are thought to be caused by inappropriate budding of

the embryonic biliary tract when the caudal bud of the hepatic diverticulum divides.³ In our search of the literature we found numerous case reports of patients with duplicate of even triplicate gallbladders.^{2 4 5}

Histological examination in our case, however, showed that the 'neo' gallbladder comprised a reservoir that had formed secondary to the leakage of bile, probably caused by a small

Ductus choledochus
Clip
Neo-gallbladder
Duodenum
Liver

Figure 2 A picture taken during surgery. It shows a bulging of the common bile duct cranial to the clip of the previous cholecystectomy, which was connected to the common bile duct with its own duct.

Figure 3 A picture taken straight after surgery. It shows the 'neo' gallbladder together with the concretions that were inside it.

peroperative lesion of the common bile duct during the previous cholecystectomy. An alternative explanation might be that there was biliary leakage from the cystic duct after the previous cholecystectomy. Unlike the normal histological image of the gallbladder, the 'neo' gallbladder lacked clear epithelial and smooth muscle cells. The wall mainly consisted of connective tissue with few epithelial and smooth muscle cells.

After an uncomplicated cholecystectomy, 0.1–4% of patients continue to have pain in the (right) upper abdomen.⁶ Differential diagnosis in these patients includes choledocholithiasis (or a passed bile stone), liver stone, gastric ulcer, intestinal colic or cholecystolithiasis in an accessory gallbladder.

In our patient, the upper abdominal pain was caused by gallstones trapped in a reservoir formed by bile leakage after a previous cholecystectomy—that is, cholecystolithiasis from a 'neo' gallbladder. After resection of this 'neo' gallbladder, the patient's colicky pains disappeared.

To our knowledge, no similar cases have been reported and therefore the incidence of this unusual medical problem is

unknown. In patients who continue to have upper abdominal pain after cholecystectomy, in addition to other differential diagnoses, the presence of a 'neo' gallbladder should be considered.

Learning points

- ▶ Gallbladder anomalies are rare. Gallbladder duplication is found in 1 in 4000 cases at autopsy. Gallbladder triplication is even rarer.
- ▶ Leakage of bile after cholecystectomy can lead to the formation of a reservoir. In this reservoir, gallstones might get trapped, causing colicky pains. Resection of the 'neo' gallbladder removes the pain.
- ▶ A small group of patients continues to have upper abdominal pain after undergoing a cholecystectomy. Differential diagnosis includes choledocholithiasis, liver stone, gastritis or gastric ulcer or intestinal colic. As shown by this report, the presence of a 'neo' gallbladder or an accessory gallbladder should be considered.

Figure 4 An image obtained through pathological examination. It shows the microscopical architecture of the 'neo' gallbladder. It differs from a normal gallbladder, since it lacks a layer of smooth muscle cells.

Competing interests None.

Patient consent Obtained.

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