CASE REPORT

Pyogenic hepatic abscess presenting years after a choledochojejunostomy: a rare clinical occurrence

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SUMMARY

A 69-year-old Caucasian man presented with fever, chills/rigors and night sweats since 6 days. Blood cultures (4/4) initially reported Gram negative lactose-fermenting rods. Physical examination was fairly benign which included a normal abdominal examination. Laboratory tests were significant for an elevated white cell count, erythrocyte sedimentation rate and C reactive protein. Empirically, he was treated with piperacillin tazobactam. A chart review showed that he had undergone a choledochojejunostomy for a pancreatic head tumour 7 years before. We found a few reported cases of hepatic abscesses after choledochojejunostomy presenting years after the procedure. An abdominal CT scan confirmed our suspicion. Percutaneous drainage was performed and his antibiotics were switched to ciprofloxacin and metronidazole, based on the sensitivity report. The patient's clinical condition steadily improved.

BACKGROUND

Choledochojejunostomy is a common surgical procedure used in biliary bypass surgeries for a variety of indications such as biliary obstruction due to benign or malignant causes, stones, primary sclerosing cholangitis, choledochal cyst, iatrogenic bile duct injury and liver transplantation among others.¹ Intrahepatic pyogenic abscess is a rare complication of this procedure and can present several years after the procedure, as in our case. The awareness of this complication should enable clinicians to have a high index of suspicion should a patient present years later after the procedure with an occult bacteraemia before it progresses to sepsis.

CASE PRESENTATION

A 77-year-old Caucasian man came with the chief symptom of fever since the past 6 days. The fever was insidious in onset, associated with chills, rigors and night sweats, worse in the evening with a maximum of 102°F. He was seen in the emergency department (ED) and sent home on cefuroxime axetil 500 mg twice daily after blood cultures were taken. Gram stain of aerobic and anaerobic blood cultures reported Gram negative, lactose fermenting rods. The patient was then called back and admitted to the internal medicine service. He had a medical history significant for hypertension, coronary artery disease, benign prostatic hypertrophy and chronic kidney disease. In 2006, he had to undergo a Roux-en-Y choledochojejunostomy performed to relieve biliary obstruction due to a pancreatic head tumour. Social and family history was

unremarkable. The patient denied any exposure to sick contacts, recent travel, systemic symptoms such as tiredness or malaise or decrease in appetite, rash, nausea or vomiting, abdominal pain, altered bowel habits, burning micturition, polyuria/polydipsia, headache, cough or runny nose.

He did not have a fever on admission (temperature of 98.9°F). Other vital parameters were fairly stable with a BP of 133/75 mm Hg, pulse of 81/min and respiratory rate of 18/min. General physical examination was unremarkable, eyes showed no pallor or icterus. Lungs and heart seemed fairly normal. Abdominal examination revealed a scar from his past abdominal surgery, bowel sounds were heard on all the four quadrants, no distension or tenderness on palpation, liver and spleen could not be palpated and normal percussion note was heard all over the abdomen. Digital rectal examination was unrevealing. A detailed skin examination revealed no evidence of rash. Joint examination was also grossly normal.

INVESTIGATIONS

His complete blood count with differential count revealed a slightly elevated white cell count of 11.3 K/m³ with 83.9% segmented neutrophils, haemoglobin of 14.9 g/dL, haematocrit of 45.2% and platelets of 262 K/m³. Serum chemistries reported a sodium of 134 meq/L, potassium of 3.9 meq/L, chloride of 95.3 meq/L, bicarbonate 28 meq/L, Blood Urea Nitrogen of 19 mg/dL and creatinine of 1.5 mg/dL. Liver enzymes were fairly normal serum glutamic oxaloacetic transaminase (SGOT) 29 U/L, serum glutamic pyruvic transaminase (SGPT) 47 U/L except an elevated alkaline phosphatase (206 U/L).

His C reactive protein was elevated at 231.5 mg/L, accompanied by a mild elevation of Erythrocyte sedimentation rate (29 mm/h). Lactic acid was normal at 1.3 mmol/L. Urine analysis was benign with a normal appearance, pH, specific gravity, negative for nitrites and leukocyte esterase with normal urine white cell count (2/high powered field (HPF)). The Gram stain of initial blood cultures (4/4) taken in the ED showed Gram negative, lactose-fermenting rods, and the cultures later came back positive for *Escherichia coli* in isolated quantities, sensitive to most antibiotics including ciprofloxacin, ceftriaxone, ampicillin/sulbactam, amikacin, piperacillin/tazobactam among others. A CT scan of the abdomen/pelvis with oral and intravenous contrast revealed a peripherally enhancing fluid collection in the superior posterior medial left hepatic lobe, likely an abscess (figure 1).

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Figure 1 CT scan of the abdomen/pelvis with oral and intravenous contrast showing abscess located in the left hepatic lobe.

Percutaneous drainage was performed under CT guidance, with pus sent for cultures/sensitivities, which later confirmed two colonies, *E. coli* and *Klebsiella oxytoca* sensitive to most antibiotics, including ciprofloxacin.

TREATMENT

Percutaneous drainage of the abscess was performed and a 14 franc pigtail catheter drainage was placed. The patient's antibiotics were switched from piperacillin/tazobactam 3.375 g every 6 h to ciprofloxacin 500 mg every 12 h and metronidazole 500 mg every 8 h for a total duration of 2 weeks. The patient's clinical condition steadily improved.

OUTCOME AND FOLLOW-UP

The patient did well since the procedure, his pigtail catheter drain was removed and he was discharged with a scheduled follow-up in the General Surgery clinic in 2 weeks.

DISCUSSION

Roux-en-Y choledochojejunostomy is a surgical bypass procedure used in pancreatic tumours to provide biliary decompression. It is associated with multiple complications, immediate and late, which include surgical site infections, cholangitis, abscesses, strictures, anastomotic leaks and haemorrhage. Sometimes, these can lead to fatal outcomes.¹

Our literature search revealed only a handful of case reports reporting liver abscesses years after surgeries for biliary decompression. Toshikuni *et al*² reported a case of pyogenic hepatic abscess 5 years after a choledochoduodenostomy and cholecystectomy. Their patient had autoimmune pancreatitis and renal cell carcinoma, and *Klebsiella* was isolated from blood cultures. Similar to our case, the patient was treated with percutaneous drainage and intravenous antibiotics. Parilla *et al*³ studied post-operative complications of choledochoduodenostomy performed for choledocholithiasis and found only 6 out of 2610 patients to develop intra-abdominal abscesses. Suzuki *et al*⁴ reported a case of pancreatic abscess 7 years after a pancreatojejunostomy performed for chronic calcifying pancreatitis. His clinical course was a lot more malignant compared with ours,

with the patient having a high-grade fever, right hepatic pain and obstructive jaundice. The abscess was percutaneously drained and pus cultures grew *enterococcus avium* and *klebsiella oxytoca*, and he was successfully treated with percutaneous transhepatic cholangiodrainage and antibiotics.⁴

The pathophysiology of this occurrence is still unclear. A few reported cases of biliary sump syndrome after side-to-side choledochoduodenostomy can cause hepatic abscesses.⁵ It can occur with choledochoduodenostomy and choledochojejunostomy, and is caused due to obstruction in the distal common bile duct leading to the formation of a reservoir that can turn into a cesspool for microorganisms and could potentially cause intra-abdominal abscesses.⁶ Also, diabetes mellitus may be a predisposition, especially in cases of autoimmune pancreatitis.² However, our patient did not have diabetes mellitus or any other chronic ailment to suggest an immunocompromised state.

Learning points

- ▶ Always look for an abdominal source when a patient presents with a Gram negative bacteraemia.
- ▶ Pyogenic hepatic abscess can insidiously present with fever with chills and fairly benign abdominal examination.
- ▶ Pyogenic abscess can complicate choledochojejunostomy procedure and present several years after the procedure.

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Competing interests None.

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