

Ascitic Fluid Or Something More Sinister?

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Abstract

This case report describes a rare case of spontaneous biliary peritonitis occurring in a 98 year old female who had a previous cholecystectomy more than 30 years prior to presentation. Only a few case reports of spontaneous biliary peritonitis are documented in literature with the majority extrahepatic in origin. Our patient presented with localised right upper quadrant pain and was diagnosed with spontaneous biliary peritonitis when free fluid in the upper abdomen was aspirated under radiological guidance and was consistent with bile. The patient went on to undergo an ERCP demonstrating a malignant appearing stricture in the distal CBD. The patient had concurrent cholangitis with gallstones, pus and debris proximal to the stricture. No origin for the bile leak was identified on ERCP but given the clinical scenario likely originated from a small anomalous duct of the liver or 'Ducts of Luschka'. The patient improved post ERCP and was discharged home, well.

CASE REPORT

A 98 year old female presented to the Emergency Room with a five day history of acute onset right upper abdominal pain. The patient was systemically well without any other infective symptoms. There was no history of trauma. Despite advanced age the patient was in good health with no known past medical history and did not take any regular medications. The patient was independent and lived at home. Past surgical history included an open cholecystectomy performed through a midline incision more than 30 years ago in addition to an abdominal hysterectomy and open appendicectomy.

To examination the patient was afebrile and hemodynamically stable. There was decreased air entry to the right lung base but the chest was otherwise clear. The abdomen was soft, non-tender. The patient was not clinically jaundiced and was not noted to have scleral icterus.

Initial blood tests revealed an elevated WCC 20.5 and a CRP of 257. The bilirubin was raised at 47 from previously normal with global derangement of all LFTs with no specific pattern. A CT abdo/pelvis was performed which revealed a right sided pleural effusion with some subhepatic fluid and dilated extrahepatic biliary tree. There was no other abnormality identified radiologically.

The patient was admitted to the ward and treated with broad spectrum IV antibiotics and observation. The patient remained systemically well however there was no improvement in pain after 48 hours. WCC and CRP remained elevated and renal function deteriorated. The patient was sent for radiologically guided aspirated of the fluid collection under ultrasound. Frank bile was aspirated and a pigtail drain was inserted. The patient was discussed with gastroenterology and an ERCP was arranged.

An ERCP was performed and found a likely fistula between the duodenum and distal CBD. No sphincterotomy was necessary. The bile duct was cannulated and a 20mm stricture in the distal CBD found suspicious for malignancy. Brushings were taken and the stricture transversed revealing two 15mm stones along with pus and debris. The stones were removed and 2 biliary stents, a 9 Fr 9cm and 7 Fr 7 cm stent were placed with patency confirmed. The origin of the leak was not able to be identified.

The patient improved post procedure and symptoms as well as laboratory results returning to baseline. The pigtail drain output decreased and the drain was removed. The CBD brushings did not identify evidence of cholangiocarcinoma. The patient was discharged home well.

Figure 1

Axial CT Abdo/Pelvis image demonstrating small amount subhepatic free fluid and dilated extrahepatic biliary system



Figure 2

ERCP demonstrating narrowed distal CBD with biliary system grossly dilated proximally. Arrow highlighting presence of ductal stone.



DISCUSSION

The commonest cause for biliary peritonitis secondary to a bile leak is iatrogenic post cholecystectomy or post procedural with ERCP. Spontaneous biliary peritonitis is a rare diagnosis with only a few case reports recorded in

literature. Most cases of reported spontaneous bile leak are extrahepatic involving the common hepatic or common bile duct and anomalous ducts of the liver. Spontaneous bile leaks of intrahepatic origin are even rarer with only 2 case reports recorded in literature^{1,3,4}.

Proposed mechanisms for spontaneous biliary peritonitis include trauma or injury to the ductal system post procedure, pressure necrosis and perforation secondary to gallstones, increased pressure within the biliary system due to obstruction from any cause or friability of the common bile duct secondary to cholangitis^{1,4}.

In our case a delayed presentation of iatrogenic injury would seem unlikely as the patient had underwent a cholecystectomy more than 30 years prior to presentation. It is possible though that a minor ductal injury occurred at time of procedure creating a weakness that gave way under increased pressure within the biliary system due to obstruction from the distal CBD stricture and gallstones. The patient also had cholangitis.

Given that the source of the bile leak was unable to be determined at ERCP it seems unlikely that the bile leak originated from a large defect or involved the common hepatic or common bile duct. Therefore we feel it is likely that the bile leak originated from a small anomalous duct of the liver or 'Ducts of Luschka'. Ducts of Luschka are small blind ending ducts branching from the right hepatic or common hepatic duct that run within the gallbladder fossa⁴. They do not drain any liver parenchyma and are not accompanied by arteries or veins. These ducts are recognised potential sites of bile leak post cholecystectomy. Injury to these ducts may not be recognised at time of procedure due to their size and intraoperative cholangiogram may appear normal^{2,5}. In our case increased pressure within the biliary system may have caused one of these ducts to rupture which may not have been visible at ERCP or the leak was small and sealed itself.

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