Sump Syndrome: A Case of Endoscopic Biliary “Rendez-Vous” Procedure

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Side-to-side choledochoduodenostomy is a surgical technique used to improve biliary drainage. A common complication to the procedure is recurrent cholangitis, pancreatitis or biliary obstruction secondary to a reservoir or sump that is created between the anastomosis and ampulla of Vater. The treatment of choice is a sphincterotomy done through endoscopic retrograde cholangiopancreatography (ERCP). However, due to either scarring or stricturing of the native papilla, cannulation of the common bile duct (CBD) can be difficult and sometimes unsuccessful. This case describes cannulation of the fistulous tract via anterograde passage of a guidewire through the distal CBD into the duodenum followed by retrograde access into the CBD and deployment of a metal stent for definitive therapy.

A 90-year-old Peruvian woman presented to the gastroenterology clinic with right upper abdominal pain, bilious vomiting and diarrhea. She reported fevers but denied sick contacts or recent travel. Her past medical history was significant for recurrent cholangitis requiring repeated endoscopic retrograde cholangiopancreatography’s (ERCP), choledocholithiasis, Streptococcus bovis sepsis and portal vein thrombosis. Her surgical history was significant for cholecystectomy and appendectomy 40 years ago in Peru.

On physical examination, she was afebrile with normal vital signs. Abdominal computer computed tomography (CT) showed no heptosplenomegaly and without evidence of a space occupying lesion. There was dilation of the intrahepatic biliary bile ducts to 1.7 cm with pneumobilia; the gallbladder was surgically absent. Magnetic resonance imaging (MRI) showed marked intrahepatic and extrahepatic biliary ductal dilation with pneumobilia affecting predominantly the left intrahepatic bile ducts. The common bile duct (CBD) measured up to 1.6 cm. Intraductal stones could not be excluded.

An endoscopic retrograde cholangiopancreatography (ERCP) revealed a large choledochoduodenal fistula. Multiple attempts were made to cannulate the native papilla but were unsuccessful. The biliary tree was subsequently entered via a “rendez-vous” procedure through the existing choledochoduodenostomy (Figure 1). A guidewire was successfully negotiated through the fistulous tract and out the native major papilla (Figure 2). No obstructing mass or stones were noted. The CBD was then cannulated via the major papilla and a complete sphincterotomy was made. The

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distal CBD was then swept clean with removal of abundant debris.

Choledochoenterostomy is a surgical reconstruction of the bile duct, where a biliary-enteric anastomosis is created for the treatment of benign congenital conditions, trauma, injury during cholecystectomy, or palliation of pancreatic disease (1). In benign conditions, the anastomosis can establish a permanent biliary drainage and remain functional for many years (2). Prior to the advent of ERCP, patients that underwent a cholecystectomy for cholelithiasis also had a side-to-side choledochojejunostomy for retained biliary stones or a dilated CBD.

An uncommon complication of a side-to-side choledochojejunostomy is the accumulation of food, stones or debris in the CBD, thereby obstructing normal biliary drainage. This is known as the Sump Syndrome (SS) (1,2). A “sump” is defined as a covered cistern or reservoir. The term “sump syndrome” was coined after the observation of accumulated debris proximal to the papilla, in the distal bile duct reservoir of affected patients (1,2,3). Management of the Sump Syndrome (SS) has been described as early as 1976 by endoscopists performing ERCP (2). Its prevalence in the literature has been reported to be between 0 and 9.6% in patients having undergone a choledochojejunostomy (2). In a retrospective analysis involving 30 cases of SS, the most common etiology was food-debris accumulation (67% of cases) and calculi (40% of cases) (2). Endoscopic sphincterotomy is regarded as the treatment of choice for SS. In the case of an inaccessible papillae or failed biliary cannulation, a percutaneous transhepatic biliary drainage or surgical intervention may be required (2,4). Recently, endoscopic ultrasound (EUS)-guided choledochoenterostomy was reported as an effective alternative technique to ERCP in certain cases of biliary obstruction (4). However, as with traditional side-to-side choledochoenterostomy, the newer EUS-guided methodology may result in a resurgence of the Sump Syndrome.

Our patient had a cholecystectomy over 40 years ago for cholelithiasis and unknowingly had a choledochocholedochoduodenostomy for presumed retained ductal stones that resulted in the above presentation. The patient underwent repeated ERCP’s for ductal clearance through the choledochocholedochoduodenostomy for recurrent cholangitis, however never underwent cannulation of the native papilla due to presumed papillary stenosis. This case is an example of a biliary endoscopic “rendez-vous” procedure that successfully acquired transpapillary access to the biliary tree.

References