Open Journal of
Clinical & Medical
Case Reports

Volume 6 (2020)
Issue 8

ISSN: 2379-1039

Gastroduodenal artery aneurysm causing biliary obstruction in decompensated cirrhotic

Lindsay A Sobotka; Tejas Sinha; Anthony J Michaels; A James Hanje*

***Corresponding Author: A James Hanje**
Division of Gastroenterology, Hepatology and Nutrition, The Ohio State Wexner Medical Center, USA
Phone: 614 293-6255, Fax: 614 293-8518; Email: Anthony.Michaels@osumc.edu

Abstract

Biliary obstruction is caused by choledocholithiasis or malignancy. We present a rare case of obstruction due to a gastroduodenal artery aneurysm in a patient with decompensated cirrhosis that presented with worsening liver function tests after a cholecystostomy tube was placed for suspected cholecystitis. Diagnosis was confirmed with a cholecystogram. Embolization was attempted, however due to chronic occlusion of the celiac truck that was unable to be recannulated, this intervention was not offered due to risk of foregut ischemia. Patient was discharged with hospice. If able to be performed, embolization is the ideal intervention for gastroduodenal artery aneurysm causing biliary obstruction.

Keywords

Gastroduodenal artery aneurysm; biliary obstruction; embolization; cirrhosis

Abbreviations

ERCP: Endoscopic retrograde cholangiopancreatography; MELD: Model for end stage liver disease

Introduction

Biliary duct obstruction typically presents with jaundice, pruritis, right upper quadrant abdominal pain and sometimes signs of sepsis [1]. The most common cause of biliary obstruction is choledocholithiasis [2]. Other etiologies include malignancy originating from the pancreatobiliary ducts, metastatic malignancy and acute pancreatitis with associated complications [3,4]. These patients are typically managed with an endoscopic retrograde cholangiopancreatography (ERCP) with stone extraction or stent placement with subsequent improvement in biliary obstruction [2-4]. An aneurysm of the surrounding vasculature, most commonly caused by pancreatitis, is a rare cause of biliary obstruction and few case reports highlight the diagnosis and management of this unusual complication [5-7]. We present a case of biliary obstruction

due to a gastroduodenal artery aneurysm in a patient with decompensated alcoholic cirrhosis and aim to explore the management of this rare complication.

Case Report

A 77 year old male with a past medical history of decompensated alcoholic cirrhosis with continued alcoholic use initially presented to an outside hospital with three weeks of worsening right upper quadrant abdominal pain. A right upper quadrant ultrasound at the outside hospital revealed a distended gallbladder and he underwent placement of a cholecystostomy tube for possible cholecystitis given he was deemed to not be a candidate for cholecystectomy due to his liver disease.

After the procedure, his liver function tests continued to worsen prompting his transfer. At the time of presentation, his total bilirubin was 17.7mg/dL (reference range <1.5mg/dL), direct bilirubin 9.8 (reference range <0.3mg/dL), alanine transaminase 43 U/L (reference range 10-52U/L), aspartate aminotransferase 57 (reference range 14-40U/L), and alkaline phosphatase 110 (reference range 32-126 U/L). INR was 1.5, platelets were 94 (reference 146-337K/uL) and creatinine was 1.15 (reference range 0.70-1.30 mg/dL) (Figure 1). His Model for End-Stage Liver Disease (MELD) score was 27.

He underwent an MRI abdomen with and without contrast on presentation which revealed cirrhosis with suggestion of fibrosis and portal hypertension. A few small T1 hyperintense foci with T1 hypointense foci were noted and though to represent regenerating nodules. A cystic lesion in the pancreas neck measuring 1.8 x 1.2 x 2.1 cm was noted to be communicating with the main pancreatic ducts. In addition, aneurysmal dilation of the gastroduodenal artery measuring 3 cm with multiple collateral vessels with significant tortuosity was seen around the head of the pancreas. The gallbladder was collapsed by the external drain, the common bile duct was noted to be normal in caliber and tapered at the ampulla and there was mild left intrahepatic ductal dilation. There were no filling defects throughout the biliary tree.

General surgery recommended performing a cholecystogram to evaluate for cystic duct patency prior to clamping the tube in preparation of removing the cholecystostomy tube given low suspicion for acute cholecystitis. Cholecystogram revealed a short segment of high-grade narrowing/stricturing along the distal third of the common bile duct without any evidence of calculi. Obstruction was thought to be related to mass effect from the gastroduodenal artery aneurysm (Figure 2).

Interventional radiology evaluated the patient for possible embolization, however due to chronic occlusion of the celiac trunk and need to embolize branches of the superior mesenteric artery, the risk of foregut ischemia was deemed to be too high and this intervention was not offered. Vascular surgery then recommended performing a celiac artery angiogram with recanalization prior to embolization; however during the procedure, the celiac artery was note to be heavily calcified and recanalization could not be performed. Unfortunately, the patient continued to decompensate with worsening elevation in his liver function tests and creatinine (Figure 1). He was ultimately transitioned to comfort care and discharged with hospice.

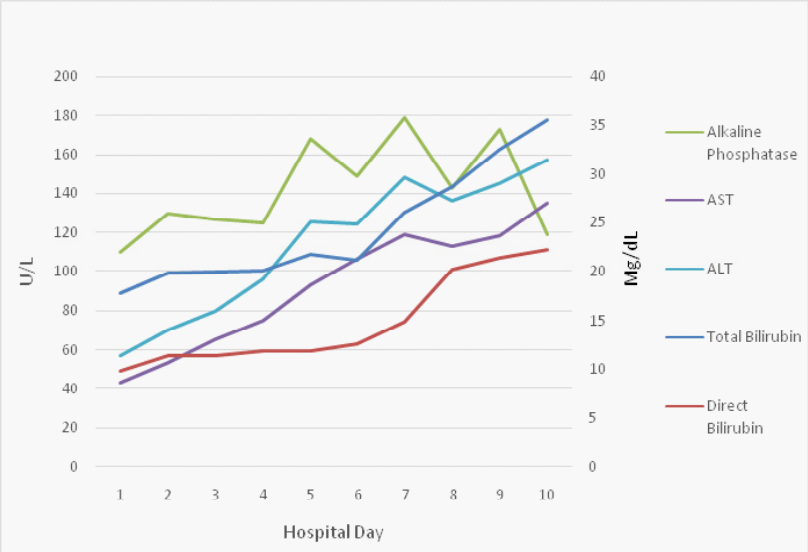

Figure 1: Trend in liver function tests

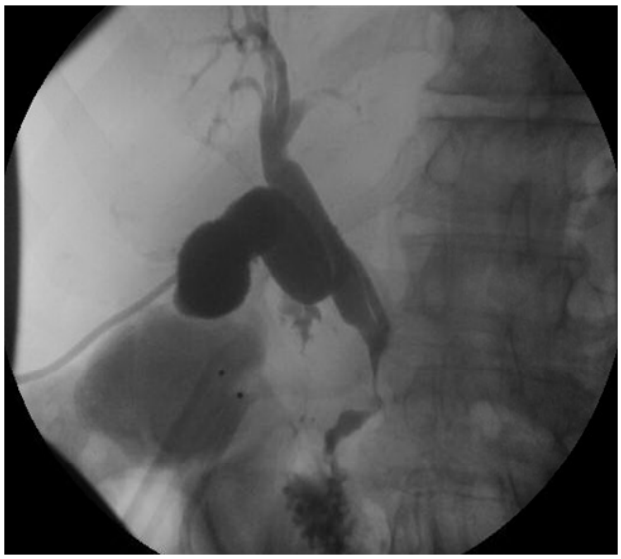

Figure 2: Cholangiogram from Cholecystogram

Discussion

Gastroduodenal artery aneurysms are rare complications of pancreatitis or atherosclerotic disease and represents about 1.5 % of all visceral aneurysms or pseudoaneurysms. Perhaps the most serious complication in these patients includes a 50 % chance of gastrointestinal hemorrhage with an associated 40 % chance of mortality [8,9]. Other complications include gastric outlet obstruction and rarely obstructive jaundice due to biliary obstruction. [8]

Few case reports have highlighted the management of biliary obstruction due to gastroduodenal artery aneurysm. Some of these patients undergo definitive management including a laparotomy with resection of the aneurysm and bypass grafting [6,10,11]. Other techniques for management have been explored as some of these patients were deemed not to be appropriate surgical candidates, similar to the patient presented in this case report. Patients can also undergo angiography with embolization which has proven to be an effective intervention and improve biliary obstruction while minimizing risk of life threatening bleeding and is becoming the preferred intervention of choice for this rare complication based on previous case reports [12], Unfortunately, not all patients are considered to be candidate for embolization either given the risk of significant foregut ischemia as highlighted in this case. Interventions other then surgery and embolization are limited. There may be a role for ERCP to improve the biliary obstruction but there is little evidence to support this intervention.

Conclusion

In summary, biliary obstruction due to gastroduodenal artery aneurysm is rare. Patients can present with jaundice, abdominal pain and rarely sepsis or gastrointestinal bleeding. Management can be surgical or with an embolization. In patients with decompensated cirrhosis, the best intervention may be like embolizationif they are deemed to be an appropriate candidate given risk of decompensation after surgery.

References

1. Liu TH, Mood FG. Pathogenesis and Presentation of Common Bile Duct Stones. Surgical Innovations. 2000; 7(4): 224-231.

2. Adam V, Bhat M, Martel M, da Silveira E, Reinhold C, Valois E, Barkun, J, Barkun A. Comparison Costs of ERCP and MRCP in Patients with Suspected Biliary Obstruction Based on a Randomized Trial. Value in Health. 2015; 18(6): 767-773.

3. Charbel H, Al-Kawas FH. Cholangiocarcinoma: epidemiology, risk factors, pathogenesis and diagnosis. Current Gastroenterology Reports. 2011; 13: 182–87.

4. Abdallah AA, Krige JE, Bornman PC. Biliary tract obstruction in chronic pancreatitis. HPB (Oxford). 2007; 9(6): 421–428.

5. Shiraishi M, Takahashi M, Yamaguchi A, Adachi H. Hepatic artery pseudoaneurysm with extrahepatic biliary obstruction. Ann Vascular Diseases. 2012; 5(1): 100–103.

6. Lewis D, Kung H, Connon J. Biliary obstruction secondary to hepatic artery aneurysm: Cholangiographic appearance and diagnostic considerations. Gastroenterology. 1982; 82(6): 1446-1451.

7. Green D, Carroll BA. Aneurysm of the gastroduodenal artery causing biliary obstruction: Real-time ultrasound diagnosis. Journal of Ultrasound in Medicine. 1984; 3(8): 375-377.

8. Kossak J, Janik J, Debski J, Rytlewski R, Salacinski. Pseudoaneurysm of the gastroduodenal artery as a cause of obstructive jaundice. Med Science Monitoring. 2001; 7(4): CS759-761.

9. Lee PC, Rhee RY, Gordon RY, Fung JJ, Webster MW. Management of splenic artery aneurysms: the significance of portal and essential hypertension. J Am Coll Surg. 1999; 189(5): 483–490.

10. Aoufi S, Herrera Justiniano JM, Garcia-Aqudo R, Garriado Serrano A, Marquez Galan JL. Gastroenterologia Y Hepatologia. 2007. 30(3): 114-116

11. Konstantakoa AK, Coogan SM, Husni EA, Raaf JH. Abeurysm of the Gastrodoudenal Artery: An Unusual Cause of Obstructive Jaundice. The American Surgery. 2000; 66(7): 695-698

12. Yen Y, Lai H, Lin C. Endovascular Salvage for Contained Rupture of Gastrodoudenal Artery Aneurysm Presented with Obstructive Jaundice. Annals of Vascular Surgery. 2015; 29(5): 1017.E1-1017.E5.

Manuscript Information: Received: January 01, 2020; Accepted: April 20, 2020; Published: April 30, 2020

Authors Information: Lindsay A Sobotka[1]; Tejas Sinha[2]; Anthony J Michaels[1]; A James Hanje[1]*

[1]Division of Gastroenterology, Hepatology and Nutrition, The Ohio State Wexner Medical Center, USA

[2]Department of Internal Medicine, The Ohio State Wexner Medical Center, USA

Citation: Sobotka LA, Sinha T, Michaels AJ, Hanje AJ. Gastroduodenal artery aneurysm causing biliary obstruction in decompensated cirrhotic. Open J Clin Med Case Rep. 2020; 1655.