

# Hemobilia Due to Rupture of Hepatic Artery Pseudoaneurysm

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**Abstract-** Although gastrointestinal bleeding is common, hemobilia due to the rupture of hepatic artery pseudoaneurysm is uncommon. We report a case of hemobilia which was successfully treated via angiography.

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**Keywords:** Hemobilia; Hepatic artery angiography; Hepatic artery pseudoaneurysm

## Introduction

Hemobilia is defined as hemorrhage into the biliary tract (1). Liver or biliary tract injury, disease or intervention can cause hemobilia; such as percutaneous transhepatic cholangiography, cholecystectomy, common bile duct stone, cholecystitis, gallbladder cancer, hepatic artery pseudoaneurysm, parasitic infestation, and liver abscess (1-8). Rupture of a hepatic artery pseudoaneurysm (HAPA) into the hepatobiliary tract is a rare cause of hemobilia (7,9). We have experienced a 67-year old female patient presenting with acute gastrointestinal bleeding, who had undergone cholecystectomy due to gallbladder and common bile duct (CBD) stone, 4 months earlier. Endoscopic and angiographic examination revealed hemobilia due to rupture of a HAPA, which was treated by embolization.

## Case Presentation

A 67-year old female referred to our hospital due to several episodes of hematemesis and hematochezia. Seven months before admission, patient was evaluated because of recurrent abdominal pain. Her ultrasonography revealed multiple gallbladder and CBD stones. Endoscopic retrograde cholangio-pancreatography was performed for her but was unsuccessful and stones were not extracted. Four months before admission, a cholecystectomy was performed through laparotomy, after an unsuccessful laparoscopy.

On admission, patient was conscious, had orthostatic hypotension, conjunctiva was pale and sclera was

icteric. After stabilization, under conscious sedation, emergency esophagogastroduodenoscopy was performed and blood oozing from papilla in duodenum was seen (Figures 1 and 2). Laboratory data on admission is mentioned in table 1.

During the next days, patient had rectal bleeding, continuous decrease of hemoglobin and blood pressure, which required massive blood transfusion. Endoscopic ultrasonography was performed; no abnormal finding was detected. Angiography was performed on the fifth day because of continuous hemoglobin decrease and hemodynamic instability, in spite of blood transfusions. A large pseudoaneurysm of hepatic artery was detected and successfully embolized through angiography (Figures 3 and 4). Bleeding was stopped; blood pressure and heart rate were stabilized. Patient was discharged from hospital after recovery. She has no problem after ten months follow up.

**Table 1.** Laboratory values on admission

Complete Blood Count	
White cells (/mm <sup>3</sup> )	18,100
Poly (%)	79
Lymph (%)	19
Hemoglobin (g/dl)	6
Platelets (/mm <sup>3</sup> )	219,000
Direct bilirubin (mg/dl)	3.9
Total bilirubin (mg/dl)	8.2
Aspartate aminotransferase (U/l)	65
Alanine aminotransferase (U/l)	115
Prothrombin Time (s)	11.8
Partial Thromboplastin Time (s)	28

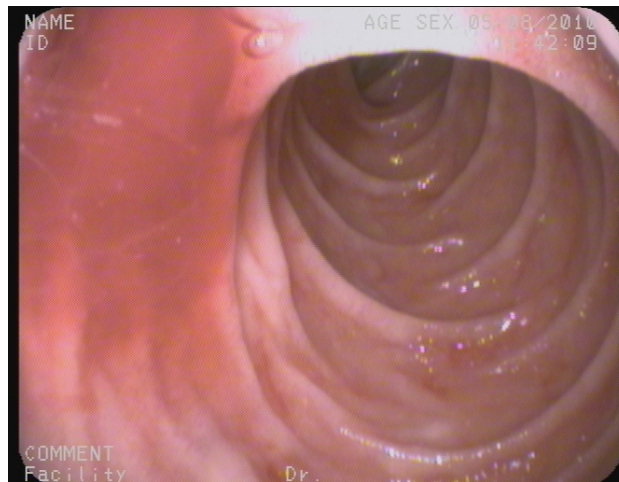
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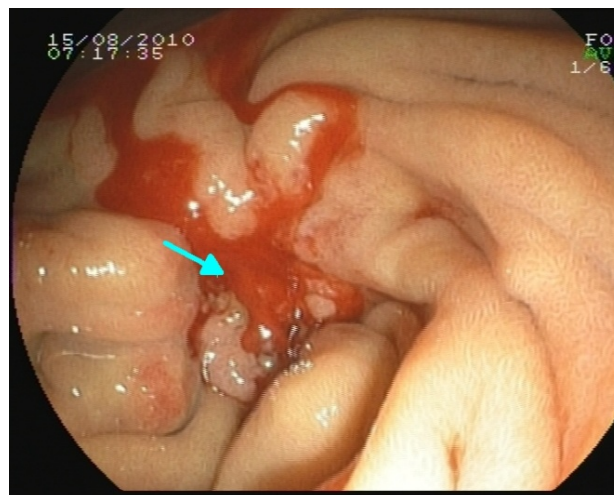
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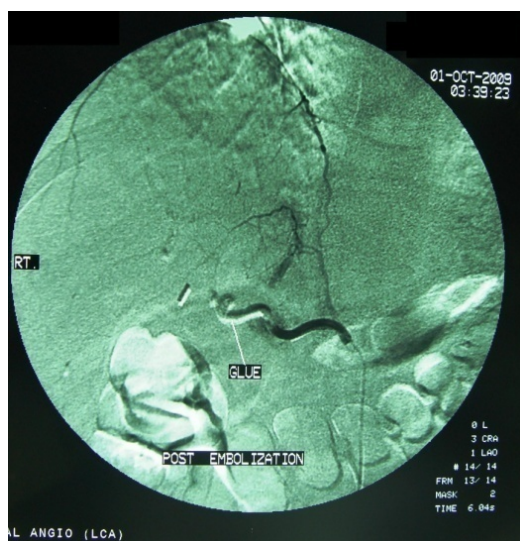
**Figure 1.** Esophagogastroduodenoscopy shows fresh blood in duodenum.



**Figure 2.** Side view duodenoscopy shows blood oozing from papilla (arrow).



**Figure 3.** Angiography shows hepatic artery pseudoaneurysm.



**Figure 4.** Repeated angiography shows successful embolization of the pseudoaneurysm.

## Discussion

Aneurysms of the visceral arteries are rare. Pseudoaneurysms are even more rare. HAPAs are uncommon but potentially lethal. The right hepatic artery is the most common artery involved (9). The first case of hepatic artery aneurysm was described in 1819 (10). The main causes of HAA are atherosclerosis, mediointima degeneration, trauma (10,11). HAPA is usually caused by trauma. Hepatic, biliary or pancreatic procedures (e.g. liver biopsy, cholecystectomy, hepatectomy, liver transplantation and biliary transhepatic drainage) can cause HAPA (9). Although HAA may present with epigastric or subcostal pain (11), the most common presentation of HAPA is bleeding that may present with rupture several months to years after undergoing any of these procedures (9). Duodenoscopy is useful for detecting bleeding from the papilla in many patients (1).

Rupture of aneurysm into the biliary tract may cause hemobilia that presents with gastrointestinal bleeding, epigastric pain and icter (11). Doppler ultrasonography can detect HAA (10), but the most useful diagnostic procedure is Angiography (9). There are different options for the treatment of hepatic artery aneurysms. The factors that affect treatment choice are the institution's preference, the general condition of the patient, the morphological characteristics and the anatomic location of the lesion (10). HAA with different causes were treated by Angiographic embolization (12-15). Because embolization has a high success rate for

treatment of HAPA, operation should be done for those who fail embolization (9).

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