# Endoscopically diagnosed fistula between hepatic artery and first part of duodenum as a cause of massive upper gastrointestinal hemorrhage

## Introduction

Hepatic artery pseudoaneurym (HAP) is one of the rare causes of upper gastrointestinal bleed (UGIB). It usually presents as bleeding in to the biliary tract or hemobilia.Fistulous communications between hepatic artery and GI tract are very rare and may present with UGIB. We report here a case ofUGIB which was initially suspected to be due to hemobilia but turned out to be due to a fistulous communication betweenHAP and duodenum.

## Case

A twenty year young student presented with a history of 2 bouts of vomiting of blood, followed by passage of black stools, associated with postural giddiness over last 6 hours. He had a history of mild upper abdominal discomfort since last four days. There was no history of intake of non-steroidal anti-inflammatory drugs, alcohol intake, abdominal trauma or jaundice. He gave a history of being treated for amoebic liver abscess with needle aspiration, about 8 months back in another hospital. Three months after the treatment for abscess he was detected with an aneurysm of the hepatic artery on follow-up imaging. He was being planned for treatment of this aneurysm, when he presented with UGIB.

General physical and abdominal examination was normal except mild anemia and tachycardia. The provisional diagnosis was that of hemobilia due to biliary communication of hepatic artery pseuodaneurysm.

Laboratory investigations were: hemoglobin, 10.1gm% (previous hemoglobin was 15gm%); total leucocyte count, 14300/mm$^3$; creatinine, 0.4mg%; bilirubin, 0.7mg%; alanine aminotransferase, 56 IU/L; alkaline phosphatase, 134 IU/L; and albumin, 3.6gm%.

After resuscitation, the patient was taken for esophagogastroduodenoscopy and side viewing duodenoscopy, which revealed a bulge in the first part of duodenum just beyond the pyloric rim, with an ulcerated dimple in the centre of the lesion, covered with a flat red spot (**Figure 1**). There was bile coming out of the papilla.

Since there was a history of a suspected hepatic artery pseuodaneurysm and hemobilia could not be demonstrated, this lesion was thought to be the source of bleeding and a provisional diagnosis of HAP fistulizing or eroding into the first part of duodenum was considered.

The patient then underwent CT angiography which confirmed that there was a large saccular dilatation of the hepatic artery proper, extending into the root of the right hepatic artery (**Figure 2**). In addition, there was another small saccular aneurysm in one of the intrahepatic branches of the left hepatic

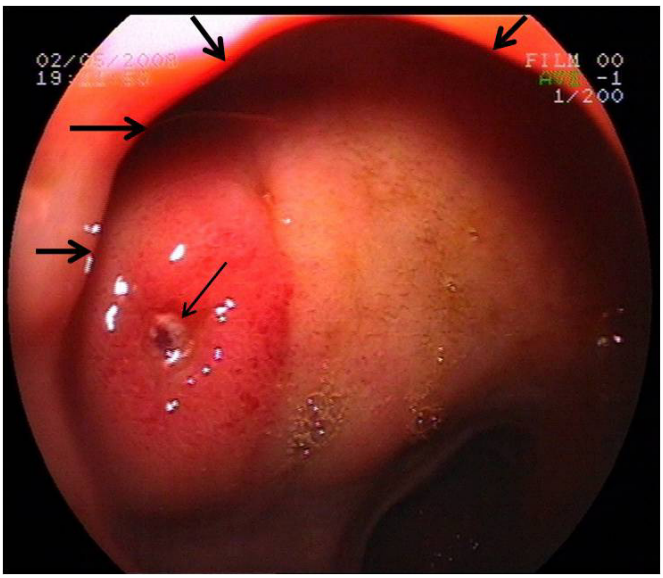

Figure 1: Endoscopic picture showing the raised nodule with a central ulcerated dimple (thin arrow) in the first part of duodenum, seen just beyond the pyloric rim (mapped by thick arrows).

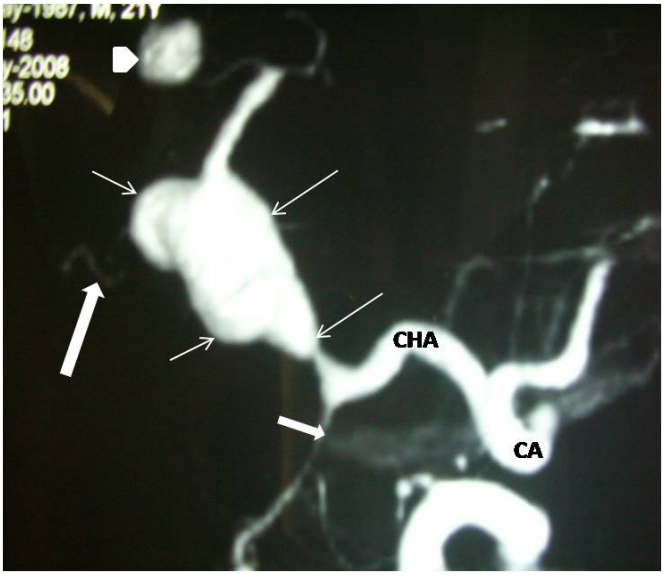


Figure 2: CT angiography shows the large fusiform aneurysm involving proper hepatic artery extending in to the root of right hepatic artery (mapped by thin arrows). Another aneurysm is seen in relation to a branch of left hepatic artery (arrowhead). The attenuated right hepatic artery is seen distal to the aneurysm (long black arrow). Short black arrow is highlighting the gastroduodenal artery. CHA: common hepatic artery; CA: Celiac axis.

artery. There was a partial thrombus within the larger aneurysm, which was also seen to be adherent to the antroduodenal area.

Initially radiological intervention was sought with the view to put a covered stent graft across the aneurysm. However because of the unfavorable anatomy of the distal right hepatic artery and the fact that there was another aneurysm in the left hepatic artery branch,the patient was planned for surgical intervention.

Intra-operatively there was a large aneurysm in the hepatic artery proper extending to the right hepatic artery.The aneurysm had eroded into the first part of duodenum and was found adherent to it. Beyond the aneurysm, the right hepatic artery was found to be attenuated and therefore unsuitable for any anastomosis.

The left gastric artery was anastomosed to the left hepatic artery. Sleeve resection of the first part of duodenum, as part of excision of the eroded pseudoaneurysm was performed along with cholecystectomy. The residual liver abscess cavity was also excised. The aneurysm seen in the left hepatic artery could not be identified intraoperatively and was left untouched.The histological examination of the resected aneurysm confirmed it to be a pseudoaneurysm. The patient was discharged on the 5$^{th}$post-operative day without any complications and is currently doing fine after 2 years of follow-up.

## Discussion

Hepatic artery pseudoaneurym (HAP) is among the rare causesof UGIB and has been described only as case reports.[1] In the recent past most of the cases have been shown to occur due to increased use ofinterventional procedures of the biliary tract or afterblunt abdominal trauma.Other causes include vasculitis, choledochal cyst, cholecystitis, liver abscess and liver transplantation.[2,3]Gastrointestinal hemorrhage due to erosion of the aneurysm into the biliary tract occurs in nearly 50% ofpatients with rupture of a hepatic artery aneurysm, withone third of patients presenting with the classic triad ofbiliary colic, hemobilia and obstructive jaundice. HAP fistulizing into the duodenum and presenting as upper gastrointestinal bleed has been rarely described.[3,4] We have presented here the first case of HPA resulting from an infective process fistulizing into the duodenum.Our patient had developed HPA as a result of the ongoing infective process (mycotic aneurysm) due to the amebic liver abscess (ALA), which was treated six months back and now presented with UGIB. There are few reports of HPA developing secondary to ALA and presenting with hemobilia.[5-7]In our patient HPA directly eroded into the first part of duodenum thus producing a fistula and leading to bleeding. Mechanisms that have been postulated to explain the development of HAP with a concomitant liver abscess are: bile causing arterial wall injury, lysis of the clot and infection induced endarteritis.

KAUSHAL MADAN[1,3]
ANIL K AGGARWAL[2]
PANKAJ TYAGI[1,3]
MOHAMMED ABDUN NAYEEM[2]
MONIKA GUPTA[2]
RAMCHANDER SONI[1]
SHIV K SARIN[1,3]

*Correspondence: Dr. Kaushal Madan*
*Departments of Gastroenterology[1] and Gastrointestinal Surgery,[2]*
*GB Pant Hospital;*
*Department of Medical Hepatology,*
*Institute of Liver and Biliary Sciences,[3]*
*New Delhi, India*
*Email: k_madan_2000@yahoo.com*

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# Spontaneous perforation of bile duct

## Introduction

Spontaneous common bile duct (CBD) perforation in adults is a rare clinical event. Acute onset and delay in diagnosis can lead to considerable morbidity. We report here two successfully managed cases of spontaneous CBD perforation. Both presented as acute abdomen with localized bilioma. The diagnosis and management of these patients have been discussed.