

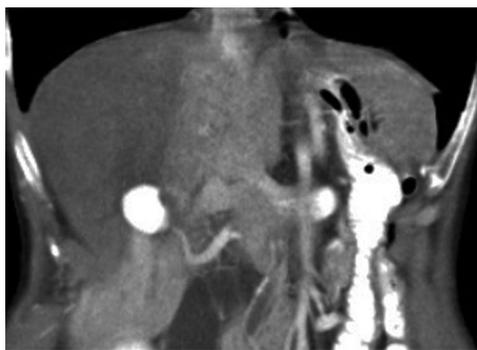
## Use of Stent Graft for the Management of Spontaneous Rupture of Hepatic Artery Aneurysm in a Patient with Variant Arterial Anatomy

A 68-year-old woman presented with fever, cough, and upper abdominal discomfort was found to have a 2.5-cm hepatic artery aneurysm. The aneurysm compressed the anteriomedial branch of the right portal vein, causing reduced enhancement of the right liver lobe [Figure 1]. Five days later, the patient experienced new onset of pain. Repeated computed tomography (CT) showed rupture of the aneurysm with flow of contrast to a 9-cm liver hematoma and further flow into the right hepatic vein [Figure 2].

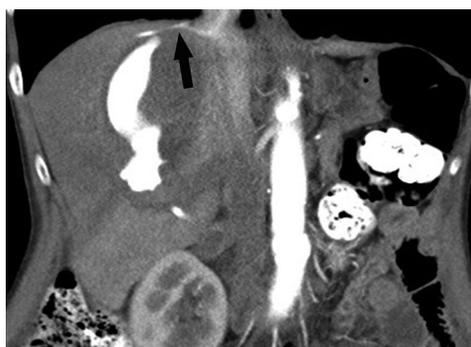
Urgent mesenteric angiography showed an accessory hepatic artery to the right hepatic lobe arising from the superior mesenteric artery (SMA), with flow to the ruptured aneurysm. A linear filling defect in the middle portion of this artery was initially considered as a dissection [Figure 3a]. However, angiography of the common hepatic artery revealed that the right hepatic artery was linked to the above-described accessory hepatic artery, causing

flow phenomenon [Figure 3b and c]. Two additional small aneurysms were diagnosed; one in the intrahepatic branch distal to the ruptured aneurysm and another one close to the origin of the common hepatic artery. The portal vein was widely open [Figure 3d].

Using a 6F Destination Introducer Sheath (Terumo, Västra Frölunda, Sweden) and over a V-18 guidewire (Boston Scientific, Helsingborg, Sweden), a 2.5 mm × 13 mm AneuGraft Dx covered stent (EPS Vascular AB, Viken, Sweden) was positioned, excluding the smaller aneurysm. Thereafter, a larger 4 mm × 23 mm AneuGraft Dx was placed to exclude the ruptured, larger aneurysm [Figure 4]. The small aneurysm at the origin of the hepatic artery was left untreated after a multidisciplinary decision. The patient was discharged on oral antiplatelet medication (clopidogrel) to prevent stent grafts occlusion. CT arteriography 4 months later showed occlusion of the stent grafts and almost total resorption of the hematoma and no perfusion defects in the liver [Figure 5a and b].



**Figure 1: Computed tomography showing liver artery aneurysm, ischemia of the right liver lobe**



**Figure 2: Ruptured aneurysm, contrast in the right liver vein (arrow)**

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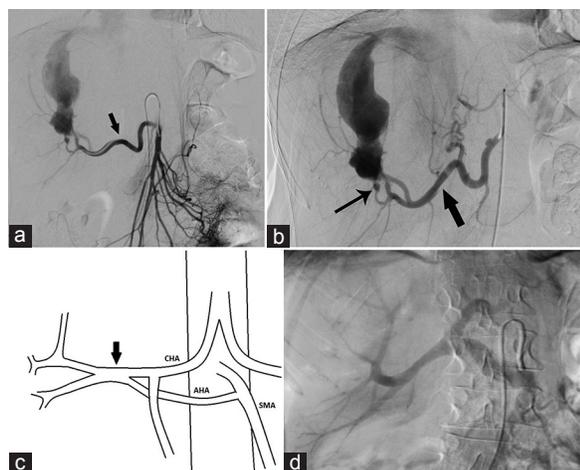


Figure 3: (a) Superior mesenteric artery angiography, filling defects in accessory hepatic artery (arrow). (b) Hepatic artery angiography, connection to the accessory hepatic artery (arrow), small, distal hepatic artery aneurysm (small arrow), proximal hepatic artery aneurysm close to the catheter tip. (c) Arterial anatomy; CHA = common hepatic artery, SMA = superior mesenteric artery, AHA = accessory hepatic artery. Arrow – connection between AHA and CHA. (d) Arterial portography

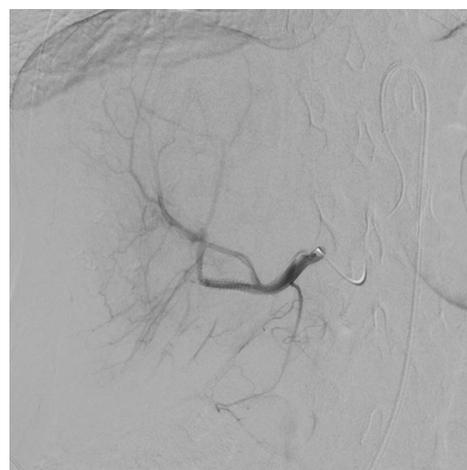


Figure 4: The aneurysm is excluded following placement of a stent graft

There are several anatomical variants in the arterial supply to the liver. This case illustrates a rare variant of direct interflow between the right hepatic artery and the accessory hepatic artery arising from SMA. The use of covered stents in the management of hepatic aneurysms may temporarily preserve arterial circulation and allow interval development of collaterals.

#### Financial support and sponsorship

Nil.

#### Conflicts of interest

There are no conflicts of interest.

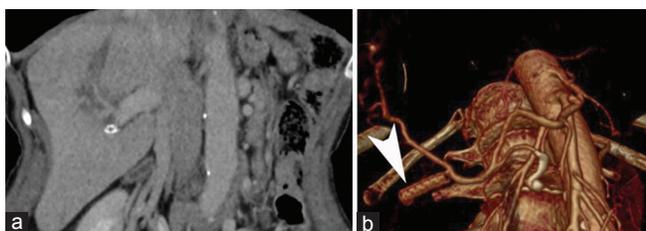


Figure 5: Computed tomography 4 months after stent-graft placement. (a) Resorption of the hematoma. (b) No flow through the stent graft (arrowhead)