Accessory hepatic vein stenting in a case of budd chiari syndrome
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Section: Interventional radiology
Area of Interest: Liver
Procedure: Education
Procedure: Stents
Imaging Technique: CT
Imaging Technique: Catheter venography
Special Focus: Haemodynamics / Flow dynamics Case
Type: Clinical Cases
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Patient: 27 years, male

Clinical History:
A twenty-seven-year-old male patient presented to the OPD with complaints of sudden onset of abdominal pain and distension for the past week. Liver function test was altered with raised serum bilirubin and altered SGOT and SGPT levels.

Imaging Findings:
The patient underwent contrast-enhanced computed tomography which showed features of a congested liver with flip-flop pattern of enhancement. Hepatic veins show hypoattenuation on delayed phase. An accessory hepatic vein is also noted in segment VI. A diagnosis of Budd Chiari syndrome (BCS) was made on the basis of the clinical and imaging features. The patient was referred to the interventional radiology team for an endovascular rescue. On conventional venogram, the diagnosis of BCS was confirmed as the hepatic veins were thrombosed. An accessory segment VI hepatic vein was noted draining into the IVC with a membranous ostial narrowing. Angioplasty and stenting was planned. Angioplasty showed wasting following which venogram showed good drainage. A bare nitinol stent was placed across the narrowing. Digital subtraction images show good flow across the stent. On follow up the patient's complaints have subsided and the LFT's have improved.

Discussion:
Budd Chiari syndrome (BCS) is a rare haemodynamic condition characterised by portal hypertension occurring due to venous outflow obstruction. Membranous webs are the most common cause of the condition in Asia [1]. Various treatment options include hepatic vein stenting, transjugular intrahepatic portosystemic shunt, surgical shunts and liver transplant. In some patients with BCS besides the three hepatic veins, some develop accessory hepatic vein which acts as the drainage channels to the IVC. Recanalisation of the hepatic vein is an effective measure in the treatment of Budd Chiari secondary to hepatic vein obstruction [1]. However, recanalisation of long segment obstructions are associated with higher failure rates.
ranging from about 30-100% [1, 2]. Re-obstruction is sometimes possible even after successful treatment [1]. TIPS is used as a first line measure in patients with long segment obstruction, however, they are associated with high risk of hepatic encephalopathy (17-35%) [3].

Hepatic venous obstruction leads to higher expression rate of vascular endothelial growth factors promoting angiogenesis. This causes formation of intrahepatic collateral channels which drain into the IVC. Studies have demonstrated 100% success rate in accessory hepatic vein recanalisation due to membranous ostial narrowing [4].

Teaching Point: Recanalisation of the accessory hepatic vein is a simple, safe, and effective treatment option in patients with Budd Chiari Syndrome.

**Differential Diagnosis List:** Budd Chiari syndrome, Membranous ostial web, Thrombus

**Final Diagnosis:** Budd Chiari syndrome

**References:**


Description: Axial sections shows flip-flop enhancement pattern suggestive of congested liver with non-opacification of hepatic veins. Origin: BGS Gleneagle Global Hospital
**Description:** Non-opacification of an accessory hepatic vein (arrow) in background of flip-flop enhancement. **Origin:** BGS Gleneagle Global Hospital
**Figure 2**

**Description:** Ostial narrowing of the accessory hepatic vein. **Origin:** BGS Gleneagles Global Hospital
**Description:** Angioplasty showing wasting at the site of ostial narrowing. **Origin:** BGS Gleneagles Global Hospital
Description: Post plasty showing good drainage via the accessory hepatic vein. Origin: BGS Gleneagles Global Hospital
Figure 3

Description: Stent placed across the narrowing. Origin: BGS Gleneagles Global Hospital
Description: Good flow seen across stent on DSA imaging. Origin: BGS Gleneagles Global Hospital