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Short Communication

Sudden Hypotension during Direct Intrahepatic Porto systemic Shunt Procedure

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Abstract: Extrahepatic portal vein rupture is a rare complication seen in patients undergoing direct intrahepatic portosystemic shunt procedure. Immediate recognition of this adversity helps in timely salvage of the patient, as is seen in this short review with striking imagery, where in deployment of a covered stent between the right portal vein and the hepatic vein – inferior vena cava junction.
Keywords: Cirrhosis, portal hypertension, direct intrahepatic portosystemic shunt, extrahepatic portal vein, portal vein rupture.

Short Communication

A 56 year old laborer from Bangladesh diagnosed with Budd Chiari Syndrome with thrombosis of all three hepatic veins (HV) and infra-hepatic inferior vena cava (IVC) underwent direct intra-hepatic porto-systemic shunt (DIPS) procedure for vascular decompression. Puncturing the intra-hepatic IVC near of the ostium of HV was done to access the right portal vein (PV) through the hepatic parenchyma (Panel A). Further advancement into the superior mesenteric vein was made and the track was dilated with a 10 x 10 mm balloon. During this step in procedure, the patient developed sudden onset hypotension with tachycardia, a hemoglobin fall from 13.8 g/dL at baseline to 9.8 g/dL on table and rising arterial lactate (1.9 mmoL/L to 5.6 mmol/L) on blood gas analysis. Immediately, saline matched leukocyte depleted packed red blood cells were transfused, low dose noradrenaline started and continued to maintain mean arterial pressure above 75 mm Hg. A check angiogram was immediately undertaken. Angiogram with catheter placed in the superior mesenteric vein revealed active contrast media extravasations noticed from the extra-hepatic PV site (Panel B) that occurred post balloon dilatation of the track through the caudate lobe. Immediate deployment of a 10 x 100 mm covered stent, followed by a 10 x 68 mm uncovered stent within the right PV extending up to the HV-IVC was undertaken. Post stent placement, venogram revealed blood flow through the stents without evidence of contrast leak (Panel C). In DIPS, intravascular ultrasound guided puncture from the retro-hepatic IVC to portal vein is made through the caudate lobe of the liver and is completed with a covered stent graft. (1) In patient of BCS where HV access is not feasible, a gun sight technique was first introduced in 1996 as a fluoroscopy guided transcaval approach, further modified to a DIPS in 2006. (2) Extra-hepatic PV punctures causes bleeding and hemoperitoneum in approximately 1% of patients undergoing DIPS procedure as it involves the retro-hepatic part of IVC. (3) In such instances, immediate graft placement and extension of the graft with an uncovered stent distal to the site of extravasation halts the bleeding as was seen in our patient.

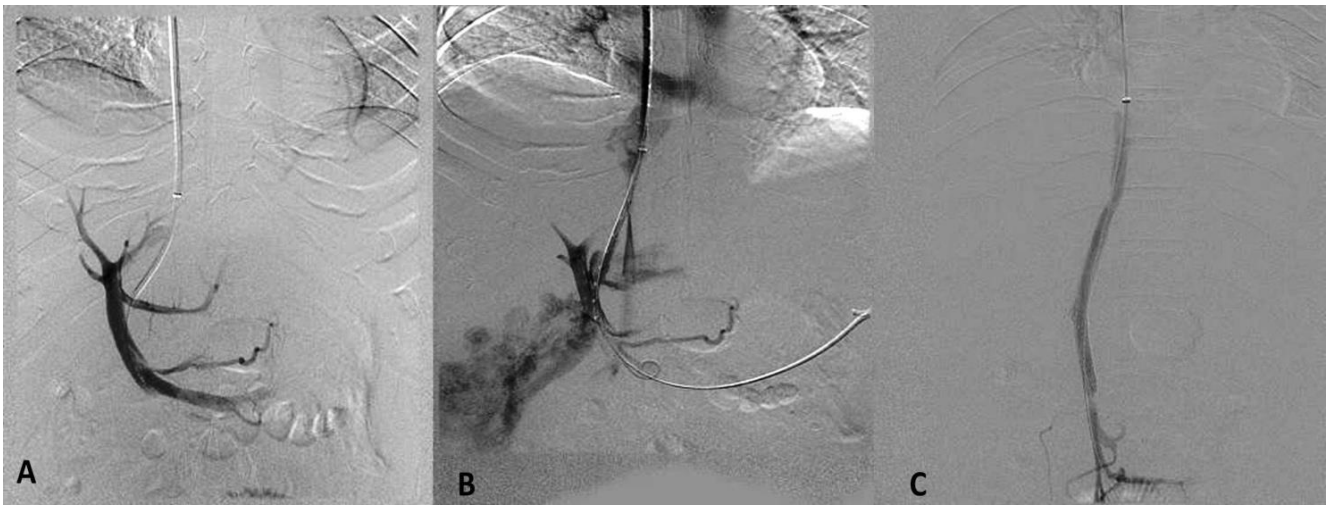

Fig 1: Real time fluoroscopy images during DIPS procedure showing normal port venous tree (A), active contrast extravasation post intervention (B) and control of bleeding post DIPS stent placement (C).

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