USE OF AN AMPLATZER DUCT OCCLUDER FOR PORTACAVAL SHUNT OCCLUSION IN A PATIENT WITH HEPATIC ENCEPHALOPATHY

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History and Physical:

Our patient is a 65-year-old male who was the recipient of a left lobe liver transplant 13 years ago with a portacaval shunt surgically created at that time. He presented with acute encephalopathy and disorientation. Workup was initiated which was significant only for an elevated ammonia level of 139 and preserved liver graft function. Physical exam was significant for a normal cardiac exam, no appreciable abdominal ascites, left upper extremity tremor and slowing of movements as well disorientation and slowness to answer questions.

Imaging:

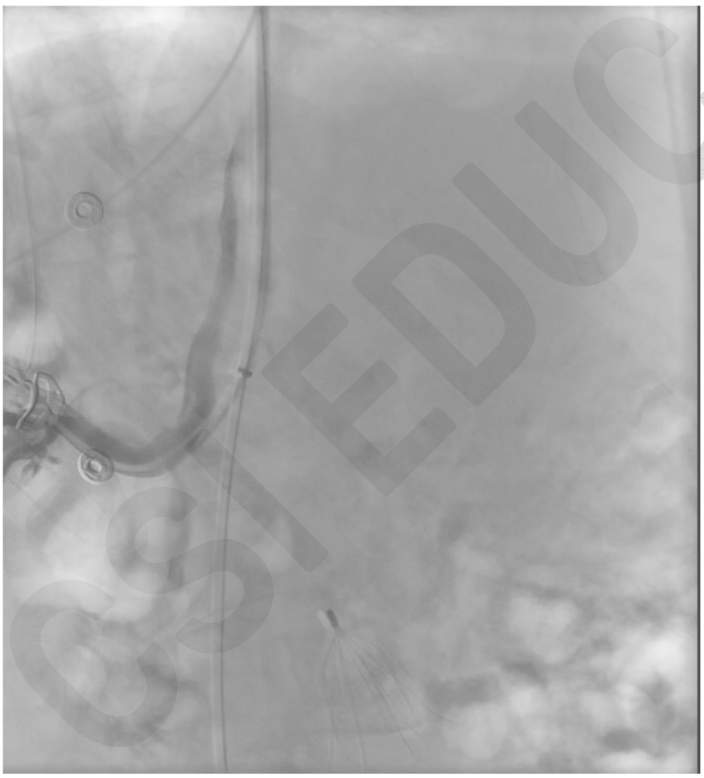

Image 1: Venogram demonstrating portacaval shunt anastomosis.

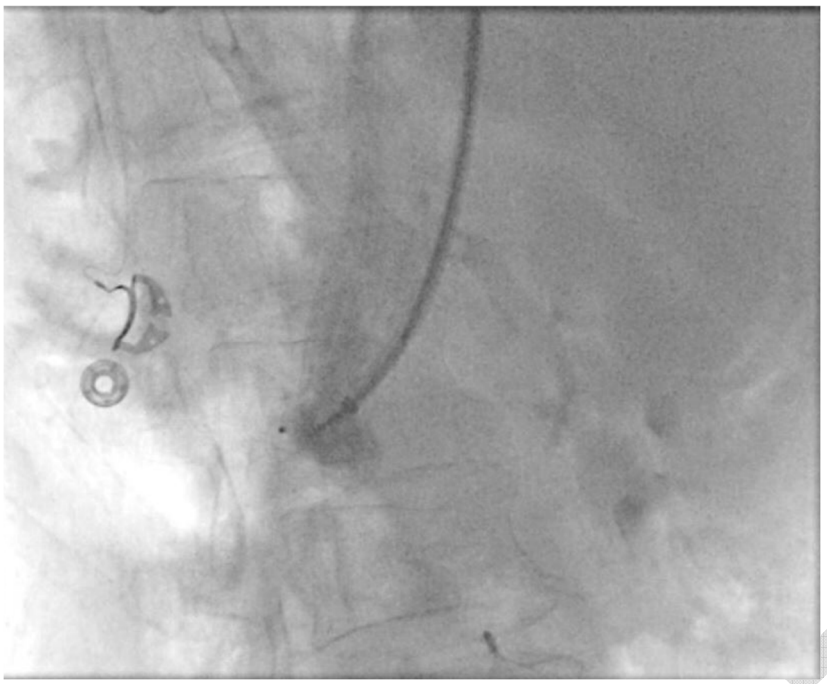

Image 2: Venogram demonstrating Amplatzer Duct Occluder device in position and complete occlusion of the portacaval shunt anastomosis.

Indication for Intervention:

His clinical picture was consistent with hepatic encephalopathy type B and medical management was initiated with lactulose and rifaximin. The transplant surgical team did not feel that he was a good surgical candidate at this time and requested a less invasive interventional approach to occlude his portacaval shunt.

Intervention:

Access was obtained via the right internal jugular vein and a 10Fr sheath was placed which was ultimately upsized to an 11Fr. A multipurpose angiographic catheter was used to gain access into the portacaval shunt and venogram was performed. The shunt measured 9 mm in diameter and at this point it was confirmed that the portal vein was large enough in diameter to accommodate the retention skirt on the Amplatzer Duct Occluder. An 8/10 mm Amplatazer Duct Occluder device was selected and loaded onto a 8Fr Amplatzer TorqVue Delivery System. The device was positioned in the portacaval shunt and was uncovered. A venogram confirmed complete occlusion of the shunt and the device was released. The patient had no complications and recovered with significantly improved mental status prior to hospital discharge 5 days later.

Learning points of procedure:

This procedure demonstrates the ingenuity amongst interventionalists when faced with a difficult anatomic case as well as the unique thought of using devices for other off-label uses. The Amplatzer Duct Occluder device fit nicely into the portacaval shunt with the typical aortic end placed on the portal venous side and the device then uncovered within the shunt with the typical pulmonary end placed on the inferior vena caval side. This device could also be used in other cases where vascular occlusion is necessary and a typical vascular plug is not of an

adequate shape and/or size. This case also demonstrates the benefit of multidisciplinary collaboration between pediatric interventional cardiologists and adult interventional radiologists to provide the best care for their respective patient populations.