

## Clinical Image

# PARTO (Plug Assisted Retrograde Transvenous Obliteration) for Obliteration of Gastric Varices and Amelioration of Hepatic Encephalopathy in a Cirrhotic Patient with Large Spontaneous Gastro-renal Shunt

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## Clinical Image

A 45-year-old female, case of Hepatitis B related Chronic Liver disease with portal hypertension presented to the Gastroenterology Outpatient Department with complains of recurrent episodes of hepatic encephalopathy requiring admission to outside hospitals. She had history of melena twice in the past six months. On examination, patient had pallor with no icterus and rest of the general physical examination was normal. Examination of abdomen revealed superficial abdominal wall collaterals; Liver was shrunken and palpable spleen. No ascites was present. Upper Gastrointestinal endoscopy showed small esophageal varices and GOV2 Gastric fundal varix. Ultrasonography of abdomen was done which revealed cirrhotic liver with splenomegaly and portal hypertension. Large collaterals were seen in the retro peritoneum. Triple phase CT Abdomen was done which revealed similar findings with a large Gastro-Renal shunt (GRS) and associated gastric fundal intramural varices. Decision to occlude gastro-renal shunt with plug was taken with subsequent obliteration of varices and collateral channel with thick gel foam (Figure 1).

**Procedure:** Right Femoral vein was cannulated with a 10 F sheath. Left renal vein was hooked with KMP catheter followed by cannulation of GRS. A 0.035" amplatz stiff wire was placed in the shunt. Thereafter a metallic plug (12 mm diameter) was placed in the shunt just away from the draining site in left renal vein. Position was confirmed with venogram and thereafter it was detached.

Repeat CECT was done next day which revealed complete thrombosis of shunt and varices with normal opacified left renal vein.

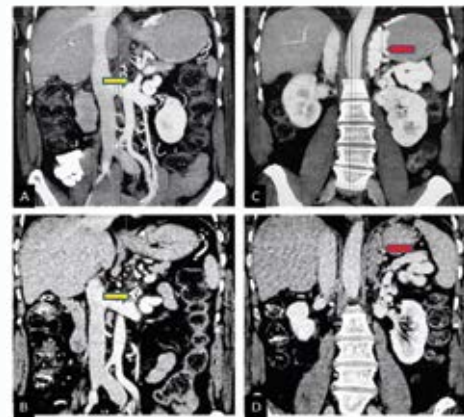
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**Figure 1:** Coronal CECT images of abdomen (A,B,C and D). Large gastro-renal shunt seen (arrow in 'A') with large intramural gastric varices (arrow in 'C'). Placement of vascular plug in the gastro-renal shunt (arrow in 'B') with subsequent complete thrombosis of gastric varices and shunt (arrow in 'D').

Patient was discharged next day.

Follow up done at 2, 4, 8, 12 and 24 weeks revealed completed resolution of complains with no recurrence of hepatic encephalopathy. Repeat Endoscopy showed resolution of gastric varices.

**Discussion-** PARTO is technically safe, feasible and effective treatment for gastric varices and encephalopathy for gastro-renal shunts. PARTO has several advantages over BRTO with nearly or better efficacy [1-5].

## References

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