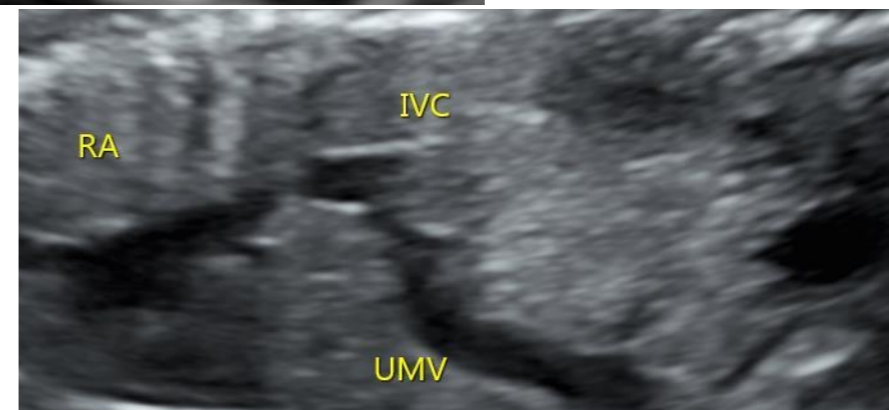
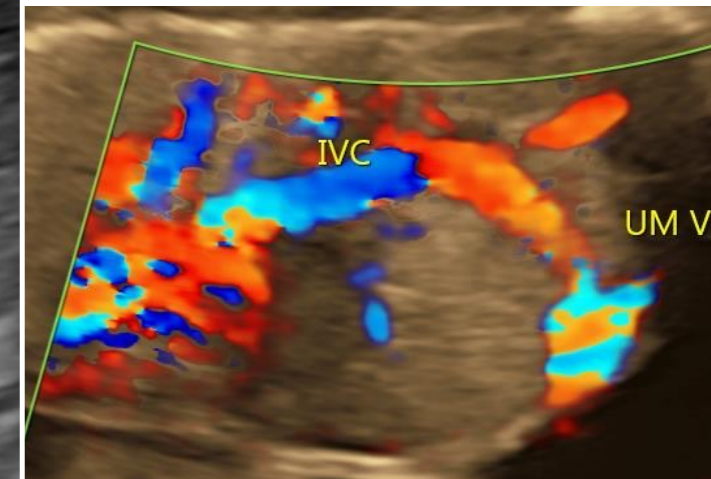
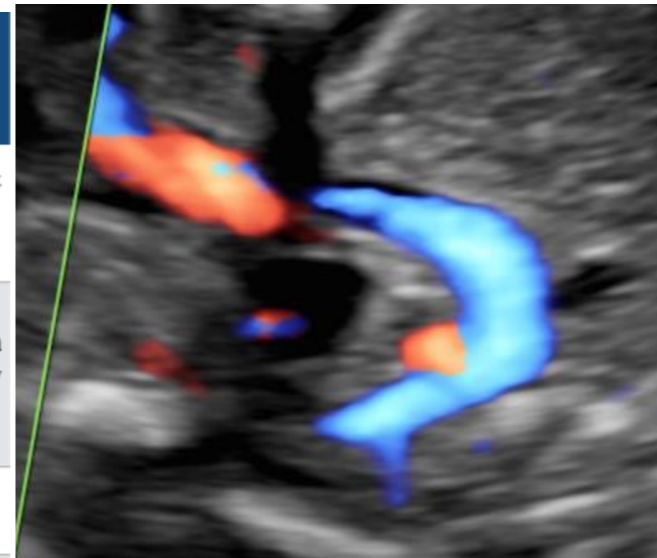


- Introduction:** The fetal umbilical–portal venous system (UPVS) comprises of umbilical veins (UV), the portal system and the ductus venosus (DV). In the case of **Ductus Venosus Agenesis**, aberrant vessels develop to maintain fetal circulation, and the two alternative routes for umbilical venous return are: 1) **Extrahepatic umbilical venous drainage**- bypasses the liver by direct connections to the iliac veins, inferior vena cava, or the right atrium. 2) **Intrahepatic umbilical venous drainage**- via the portal system, namely the portal sinus connects to the hepatic sinusoids without giving rise to the DV.
- Aim:** To examine the ductus venosus and portal venous system and to evaluate congenital malformations associated with their agenesis and outcome
- Materials & Methods:** A retrospective study was conducted at Deenanath Mangeshkar Hospital, Pune, India. 10 cases of Ductus Venosus agenesis were noted, respective umbilical vein drainage, associated ultrasound findings and outcomes were studied.

Gestational Age (weeks)	Indication for Ultrasound	Ductus Venosus	Umbilical Vein Drainage	Additional Ultrasound Finding	Outcome
19	Routine	Absent	Intra-hepatic	Inlet VSD of 3 mm	Alive & Healthy (A & H)
22	II opinion, Bowel dilatation	Absent	Intra-hepatic	One loop of bowel seen dilated (6.2 mm in width), peristalsis seen within the dilated loop. Surrounding bowel appeared echogenic. Possibility of GI obstruction	Termination of Pregnancy (TOP)
12	Routine	Absent	Intra-hepatic	None	A & H
20	II Opinion DV Agenesis	Absent	Left External Iliac Vein	<ul style="list-style-type: none"> Interrupted IVC with Dilated Azygous Vein Echogenic foci within liver B/L Pelviectasis UTD A1 	TOP
20	Routine	Absent	Intra-hepatic	None	A & H
13	Routine	Absent	Intra-hepatic	None	A & H
18	II opinion UNB	Absent	Intra-hepatic	Unossified Nasal Bone	TOP
13	Routine	Absent	Intra-hepatic	None	A & H
21	Routine	Absent	IVC	Dilated Right Atrium	TOP
20	II Opinion DV Agenesis	Absent	Intra-hepatic	Early Onset FGR	Preterm LSCS, A & H



Results: In present study, of the 10 cases of Ductus Venosus Agenesis, 8 had intra-hepatic course of umbilical vein drainage. 2 cases had extra-hepatic drainage, of which one had interrupted IVC. 4 pregnancies were terminated, rest continued with regular followup. Only 3 patients underwent invasive testing and had normal FISH, CMA. Overall, isolated DV agenesis was seen to have good outcome in our study.

Conclusions:

- Ductus Venosus should be delineated in as early as First Trimester and its flow sampled. In case of absence of DV, detailed assessment of portal venous system and associated anomalies should be done in subsequent scans.
- Isolated DV Agenesis is seen to have good outcome in most cases
- The intrahepatic type has better prognosis if associated with no other abnormality.