

# Portal Duplex Exam

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Technical Director

# DISCLOSURE

## Bonnie Brown, BS, RVT

- No relevant financial relationship reported

# Experience

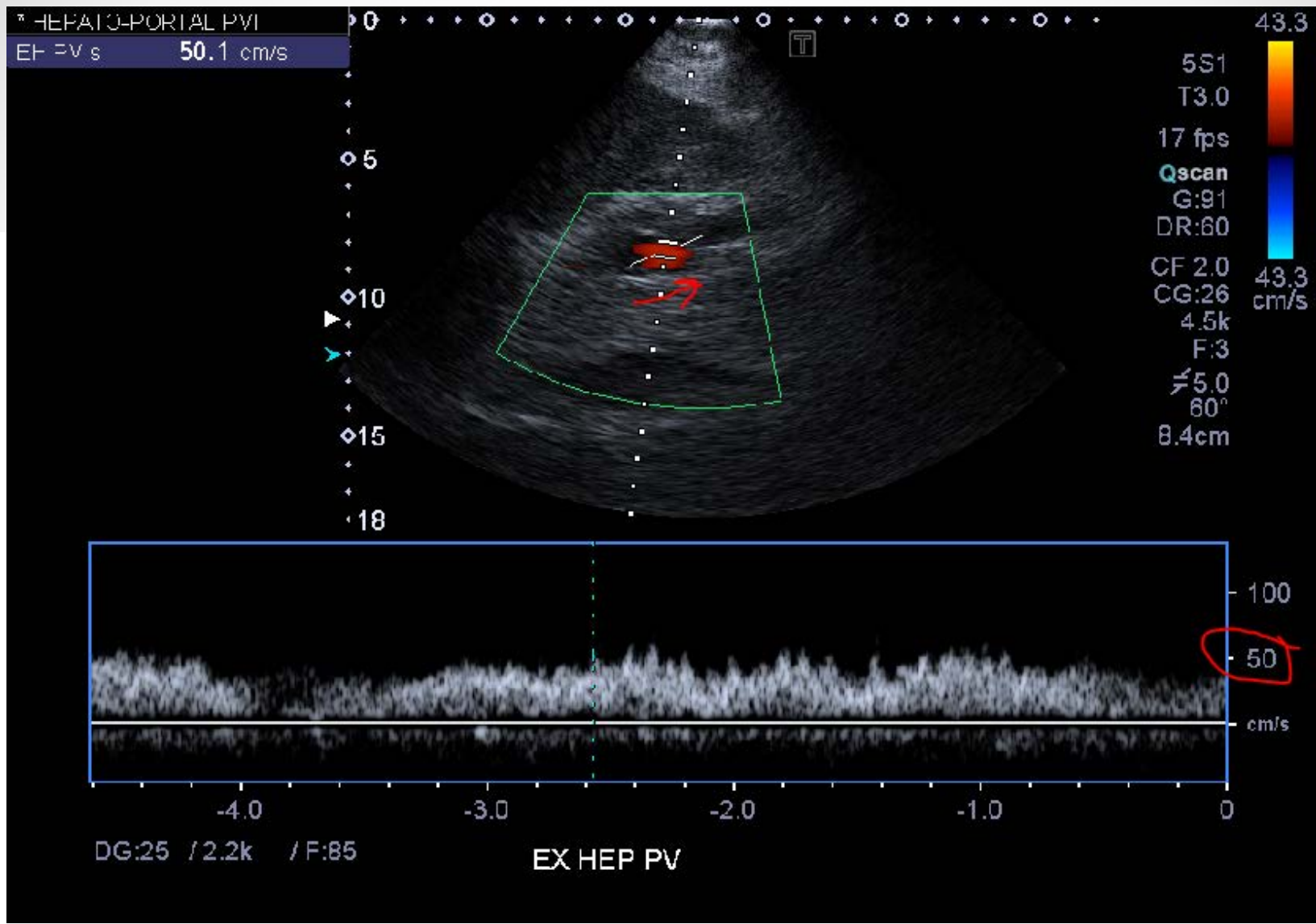
- Since 2014 we have performed over 900 portal/TIPS exams
- Only averages out to about 4 exams/tech/year
- Past nine months I have been reviewing all of these exams (approximately 150 exams)
- So Beneficial!

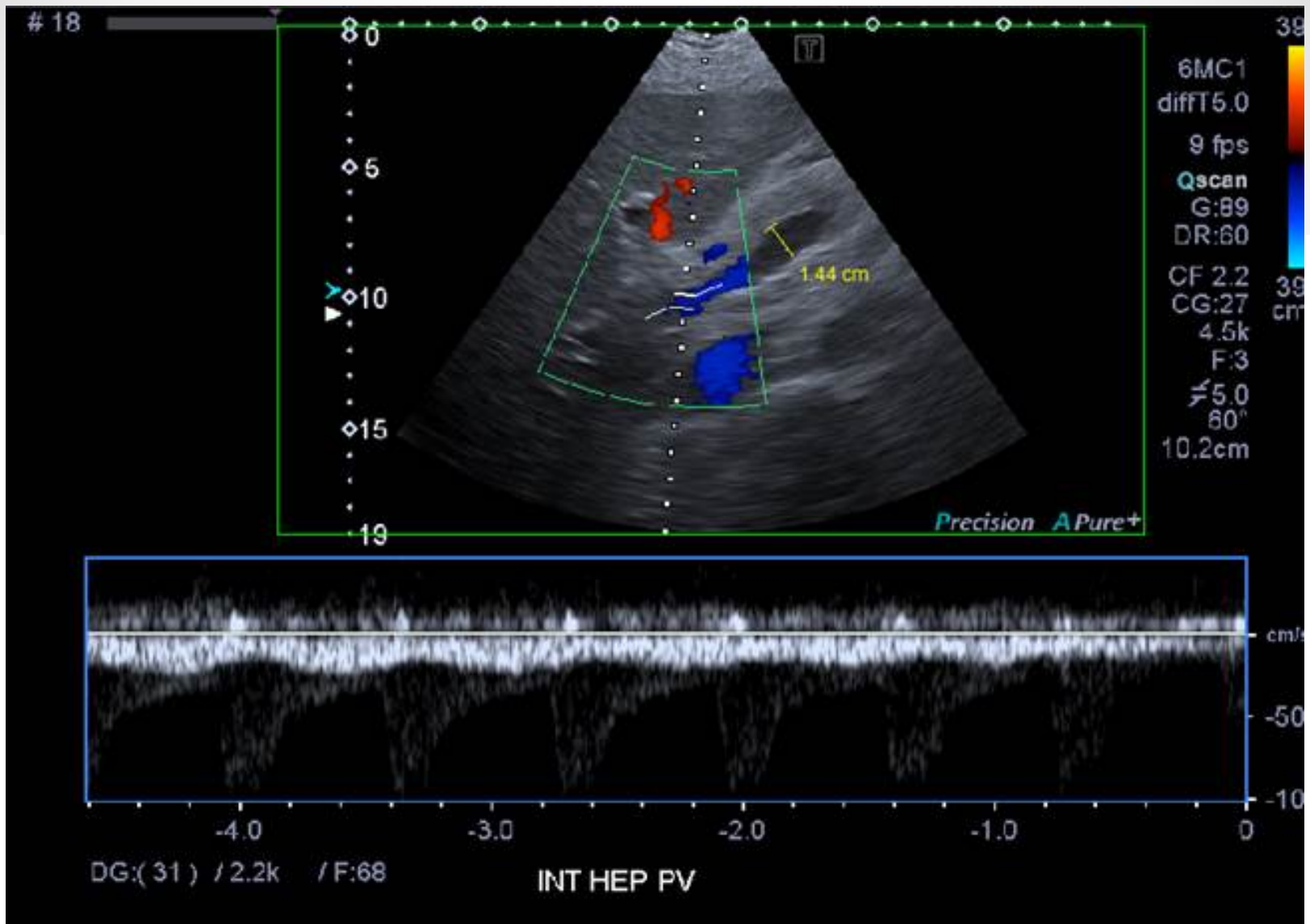
# Purpose of Exam

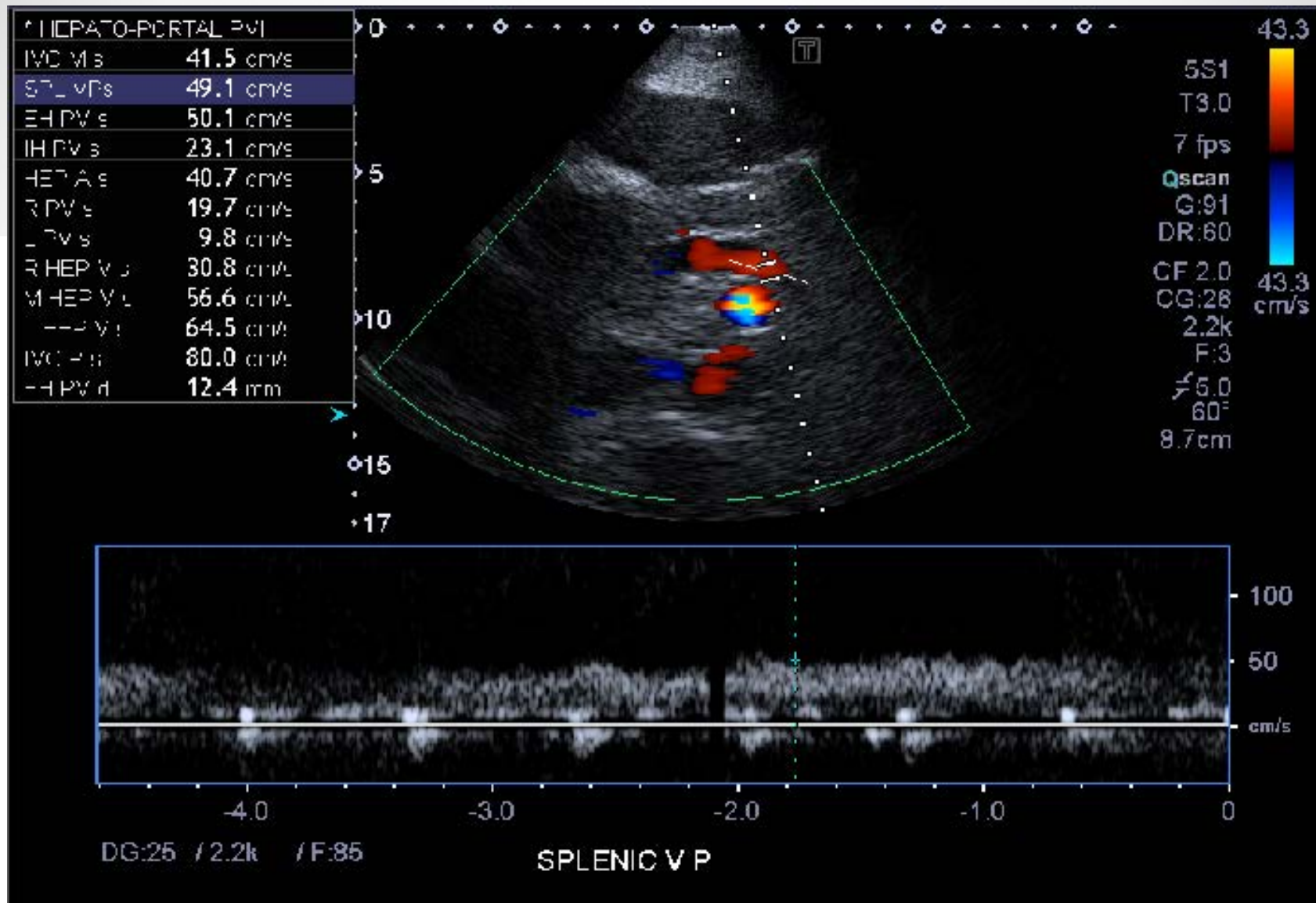
- Determine patency hepatoportal system
- Determine if there is portal hypertension
  - Portal vein diameter should be less than 13 mm (recognizing patient should be NPO)
  - Portal vein flow should be directed into the liver
  - Spleen should be less than 13 cm
  - Presence of collaterals

# Case 1

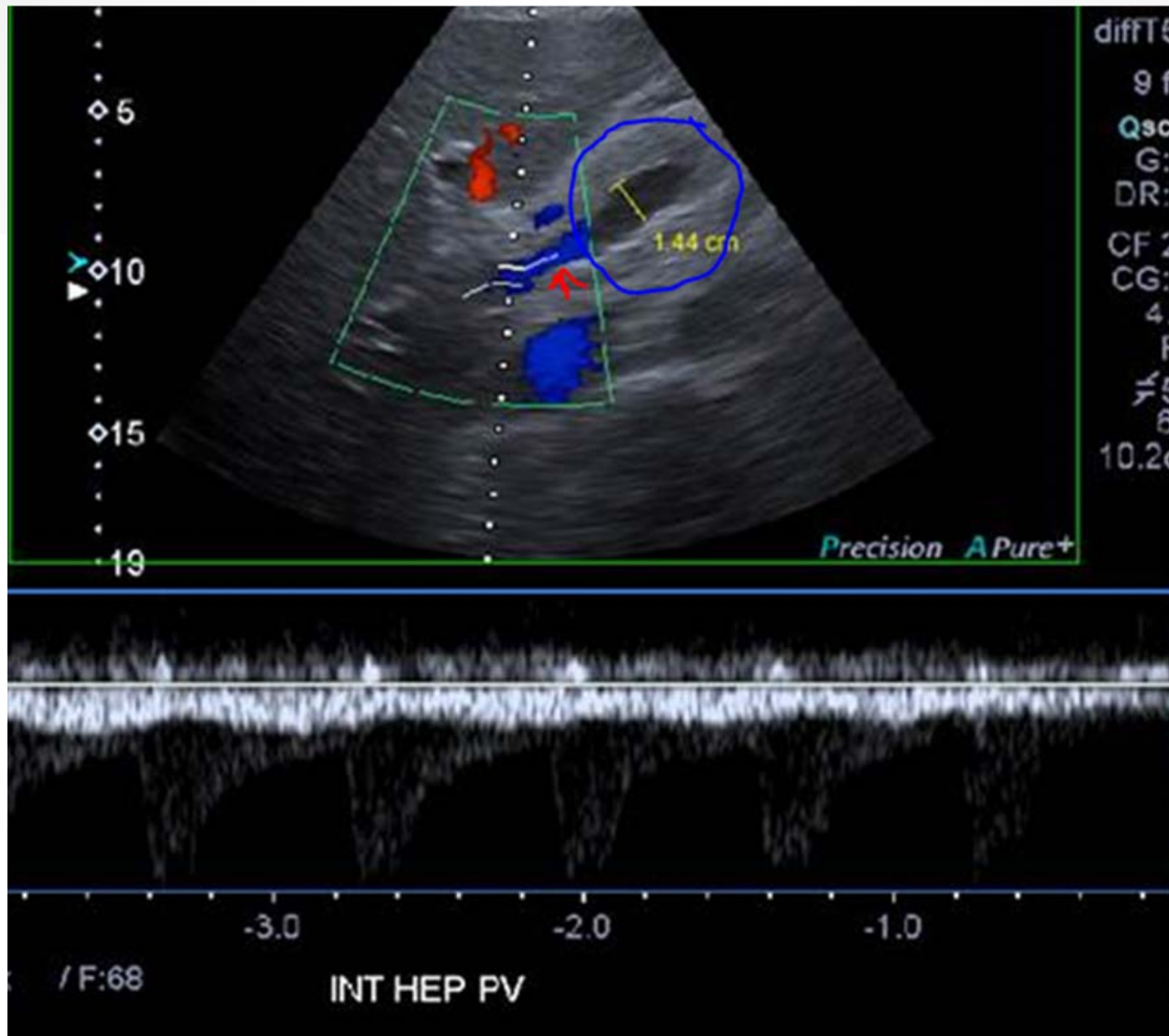
- On 1/1/2018: 50 year old male
- Patient with decompensated alcoholic cirrhosis with refractory ascites is referred for abdominal pain.

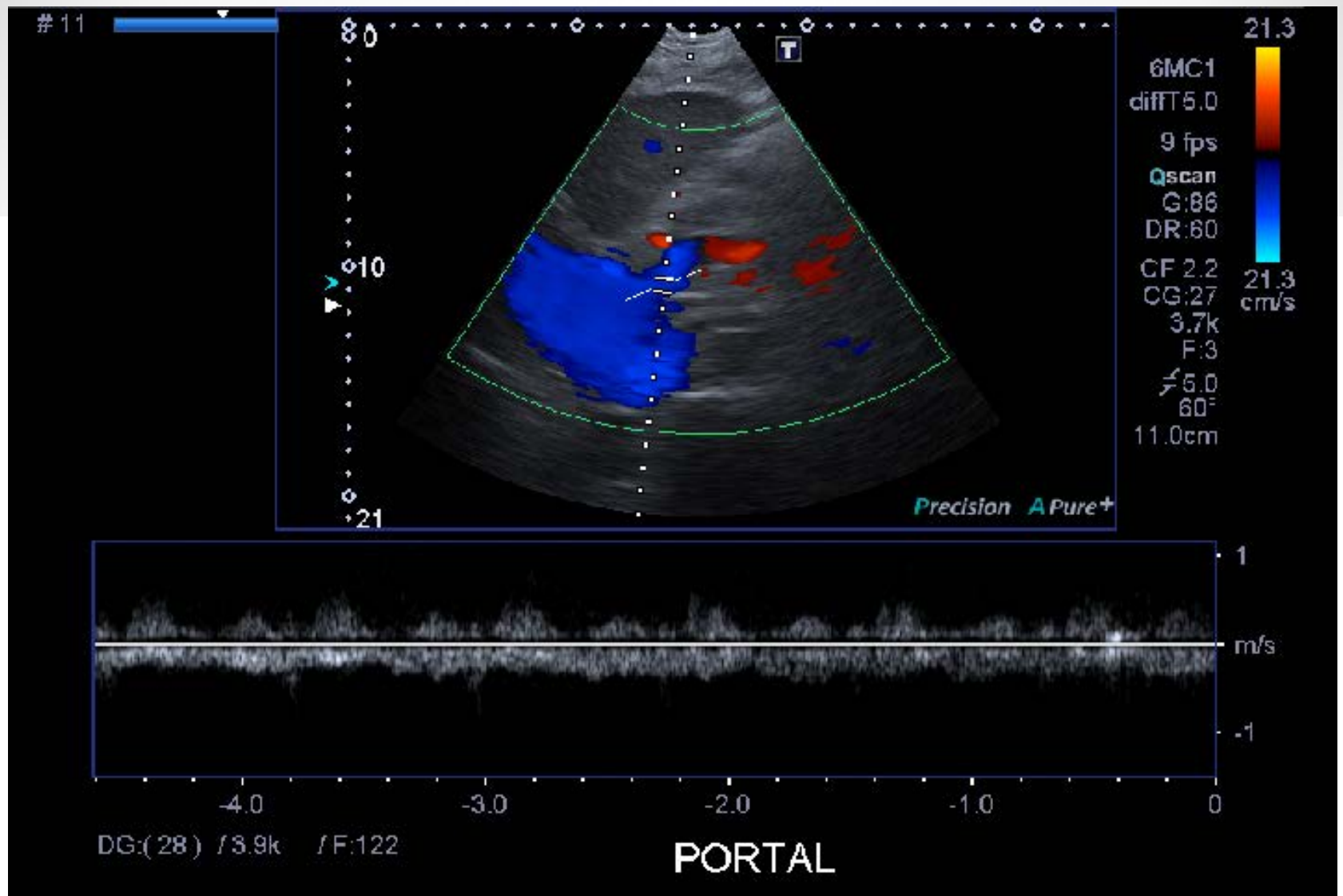


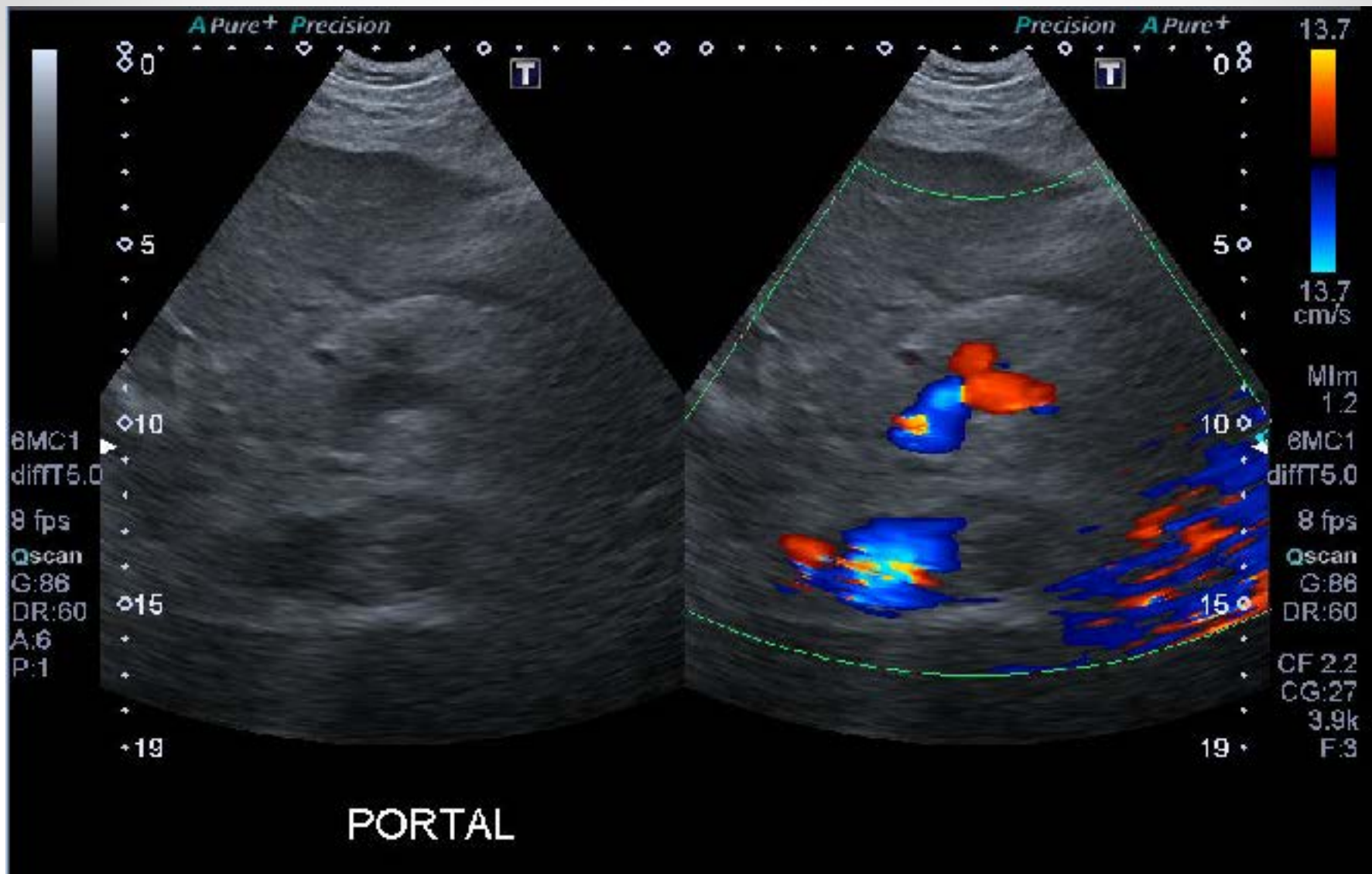




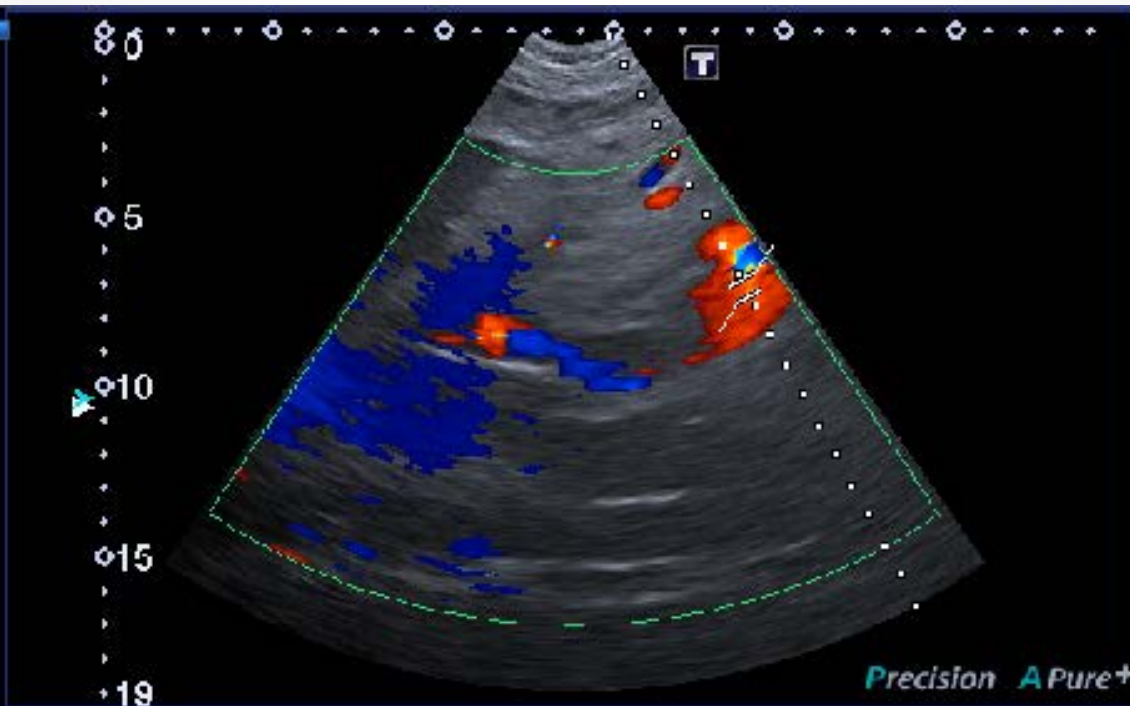




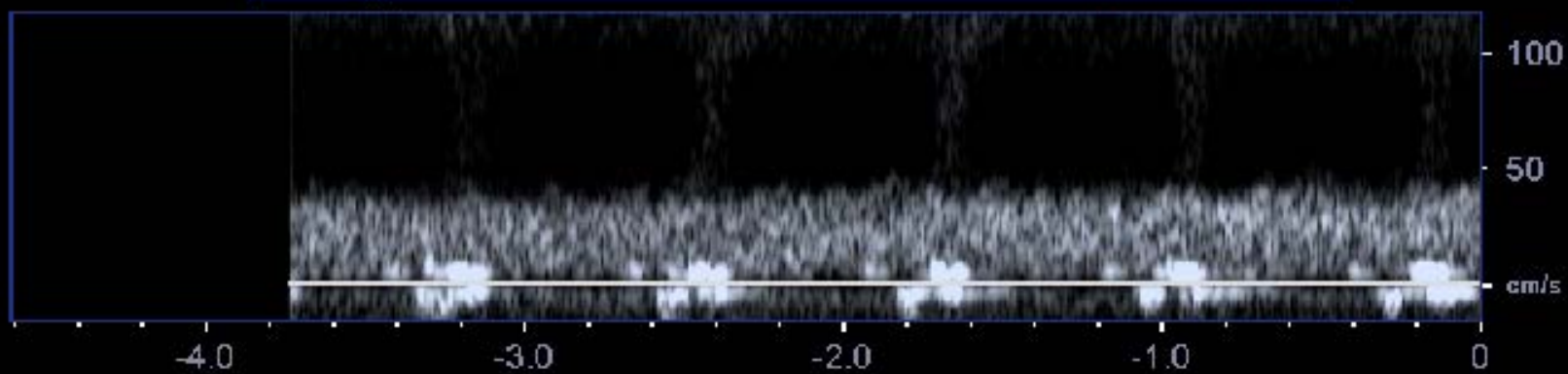




# 27

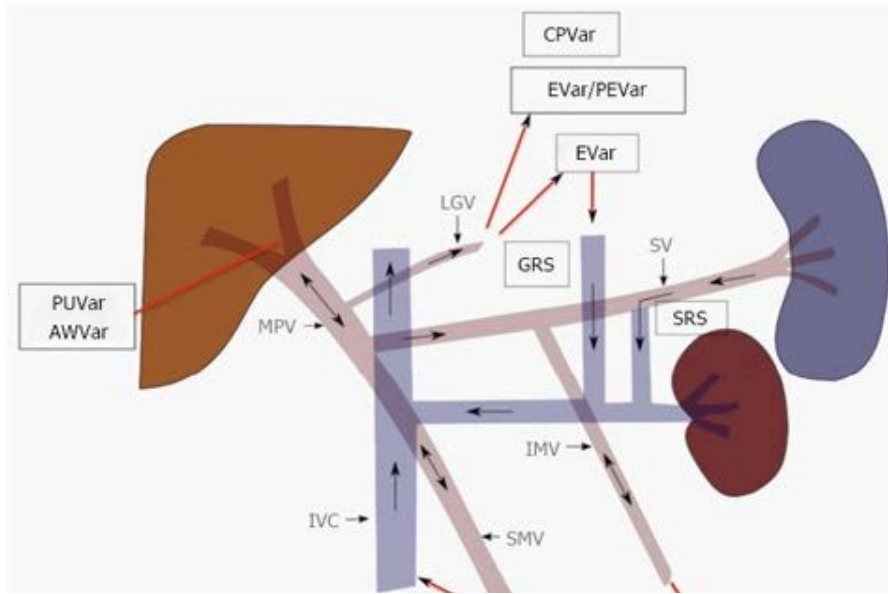


13.7  
6MC1  
diffT 5.0  
9 fps  
Qscan  
G:86  
DR:60  
CF 2.2  
CG:27  
3.9k  
F:3  
≠ 5.0  
60°  
8.4cm  
13.7 cm/s



DG:29 / 2.0k / F:61

**Figure 2**



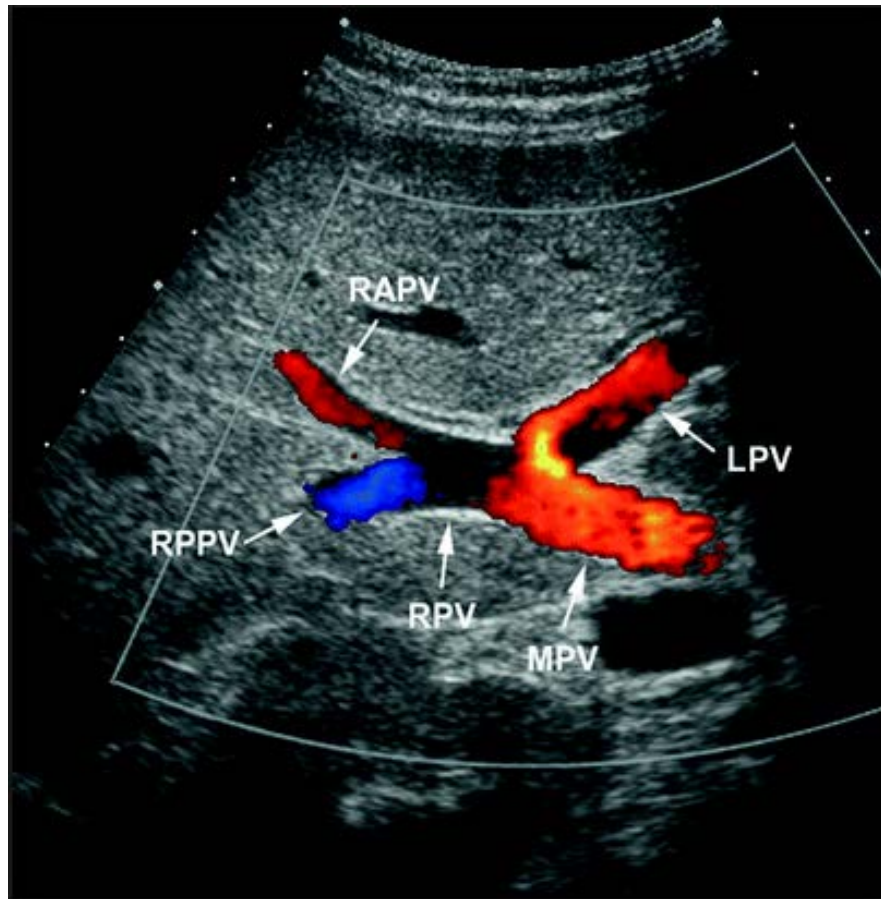
[World J Gastroenterol. 2017 Mar 14; 23\(10\): 1735–1746.](#)

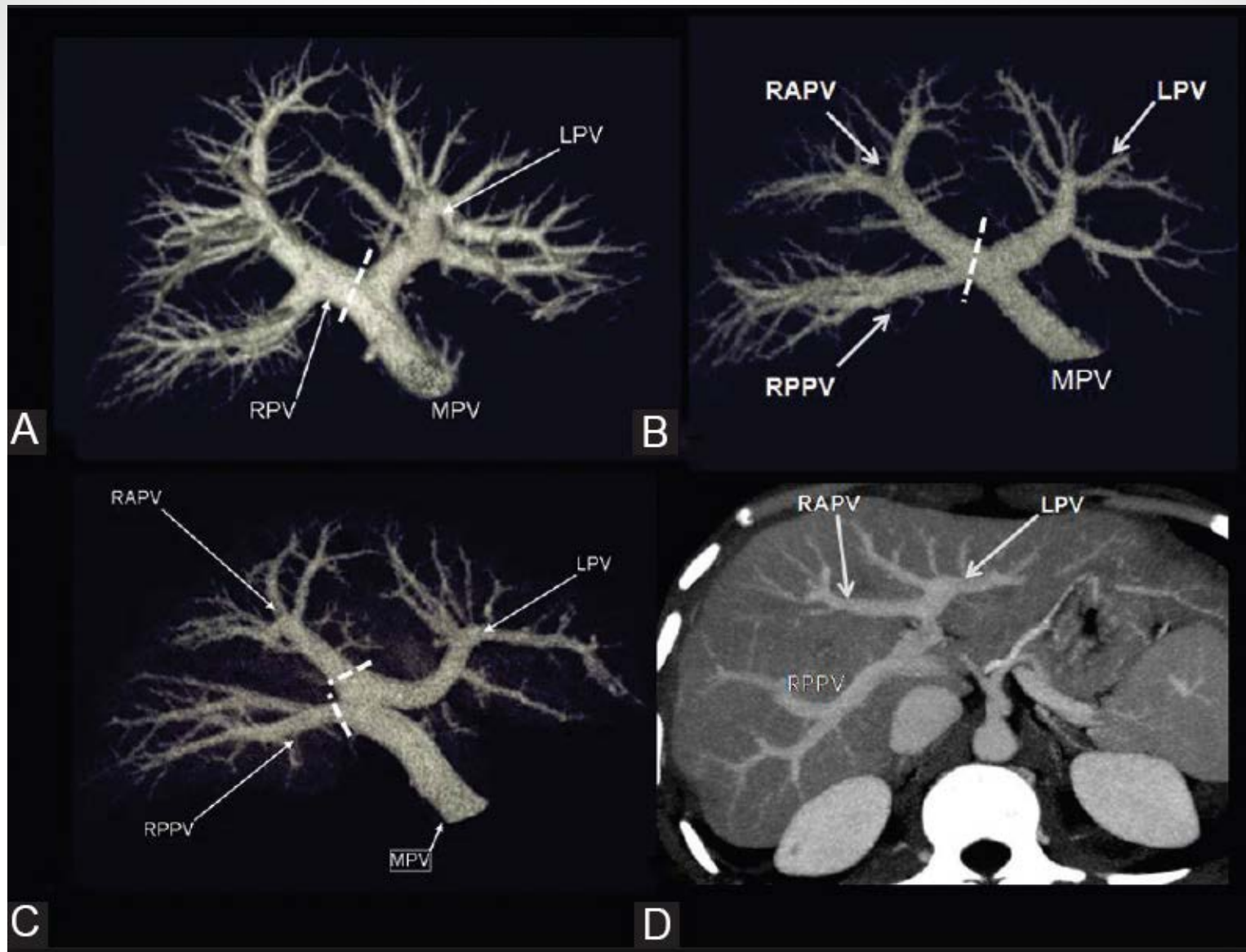
Published online 2017 Mar 14. doi: [10.3748/wjg.v23.i10.1735](#)

Portosystemic collateral pathways and direction of blood flow in portal hypertension. Progressive resistance to hepatopetal flow results in slowed and eventually reversed flow in the main portal vein (MPV). Portal venous system decompresses by recruiting several pre-existing collateral pathways, the selection of which is partly dictated by the location of the portal venous resistance. Paraumbilical (PUVar), abdominal wall varices (AWVar), esophageal (EVar), paraesophageal (PEVar), gastric (GVar), cardiophrenic (CPVar), mesenteric (MVar) and rectal (RVar) varices may be created in order to allow the passage the portal venous blood into systemic circulation. LGV: Left gastric vein; SV: Splenic vein; IMV: Inferior mesenteric vein; IVC: Inferior vena cava; SRS: Splenorenal shunt; GRS: Gastrorenal shunt.

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Published online 2017 Mar 14. doi: 10.3748/wjg.v23.i10.1735

# Portal Anatomy Variations





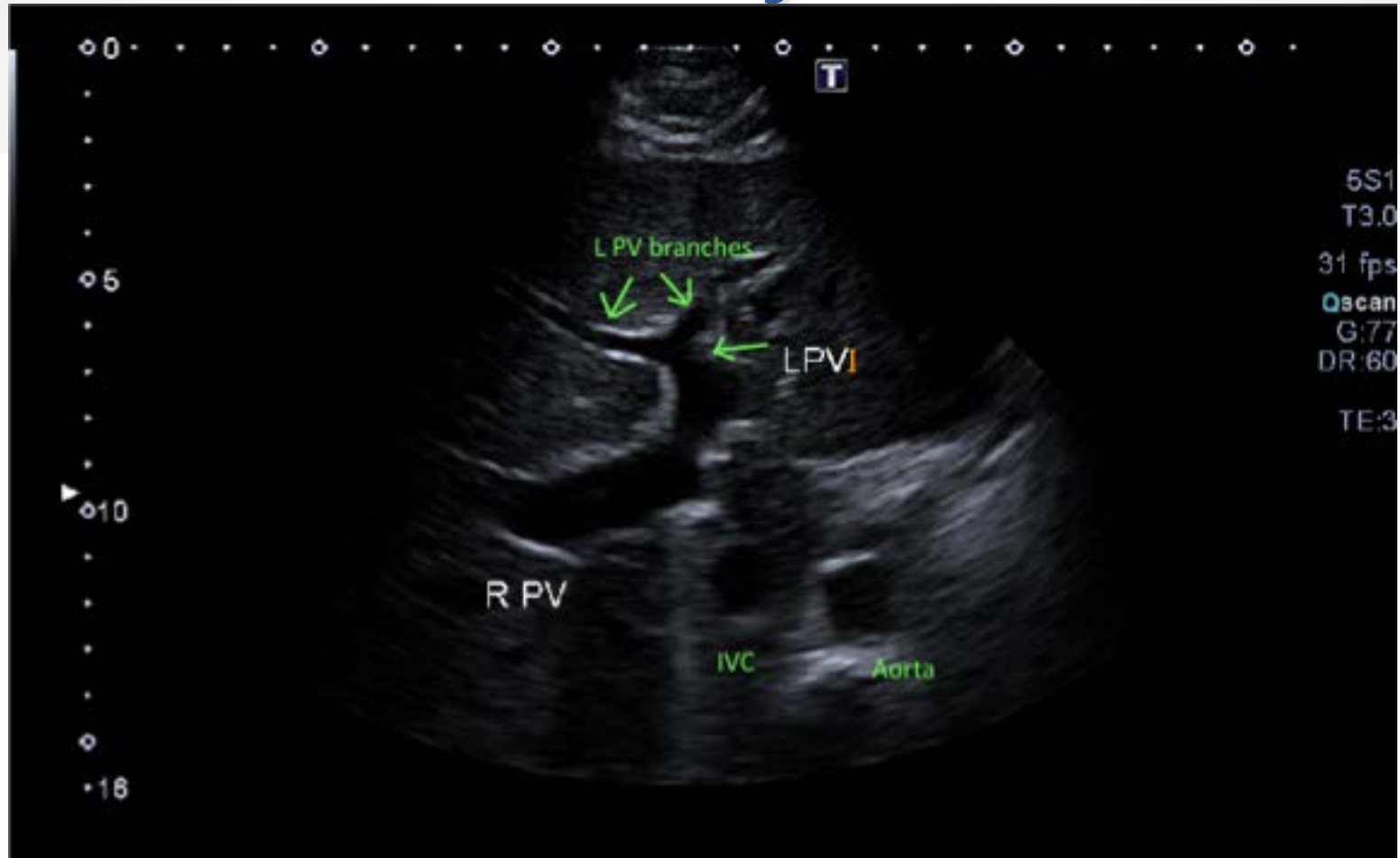
# Suggestions

- Mentally confirm the directionality of flow on each signal
- Keep your eye out for collaterals
- Keep in mind that you will often see both an anterior and posterior right portal vein and both should be evaluated if visualized

.....and remember there is always more to learn.....



# Thank you!



...and may all your portals visualize like this