



Medical Imaging  
UNIVERSITY OF TORONTO

# CAIR Case of the Month

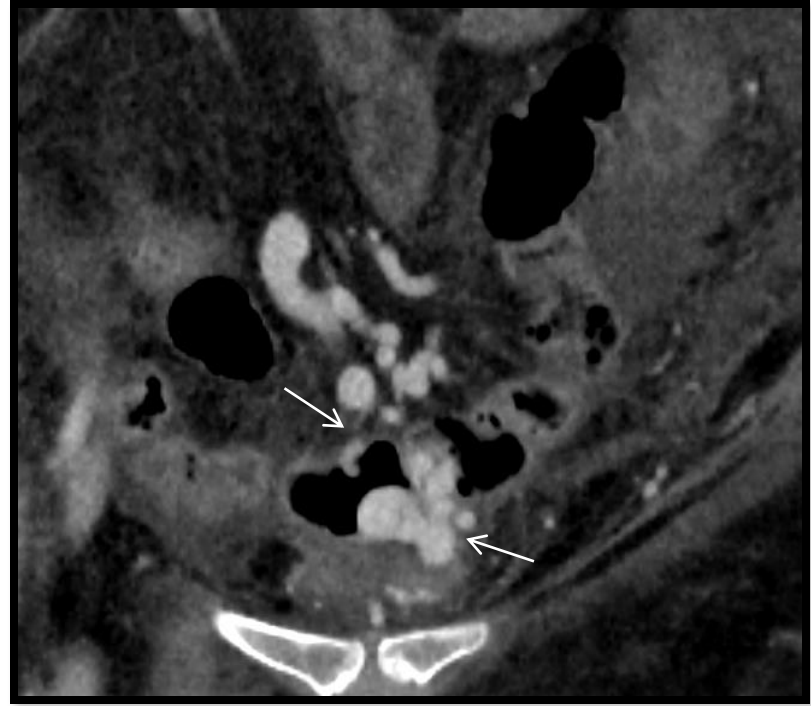
Case Courtesy of Drs. E. Qazi and S. Mafeld  
University of Toronto



# Background

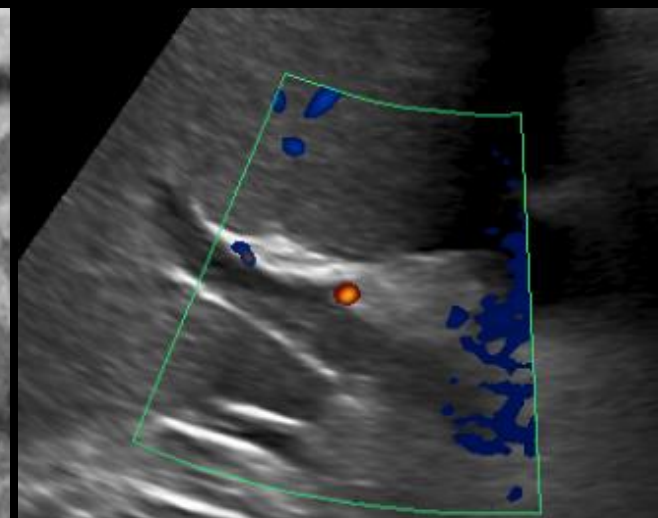
- 79 year old female presents with a 3 month history of ongoing lower GI bleeding and is transfusion dependent
- Past medical history: NASH cirrhosis (Child-Pugh B), prior encephalopathy (not currently), AKI
- Currently having ongoing melena, endoscopy negative
- Outside CT and portal venogram demonstrated portasystemic collaterals in the pelvis
  - Portal vein was patent
  - Prothrombotic – on tranexamic acid

# Varices

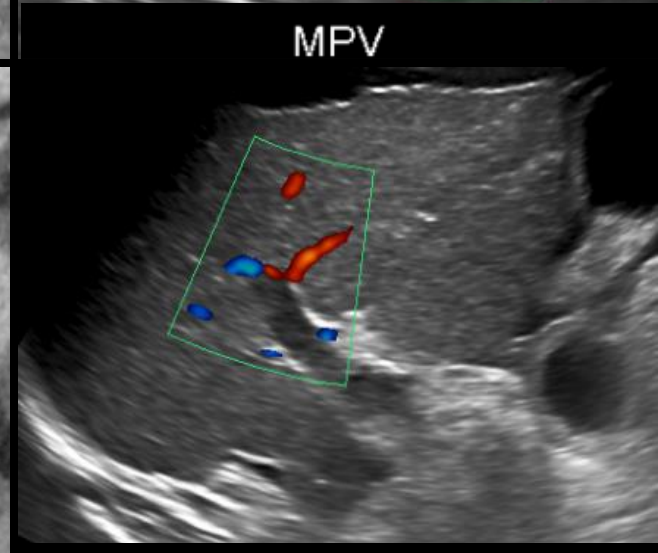
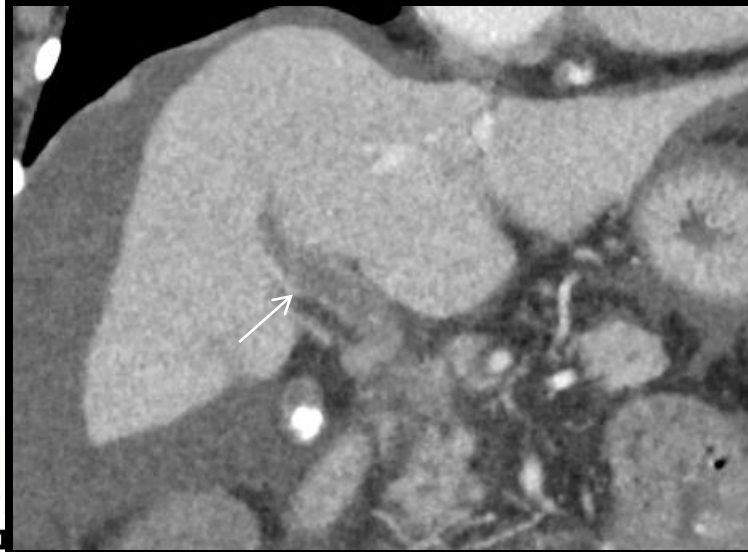


- Portasystemic collaterals between branches of SMV and left iliac vein
- Protrude into small bowel

# New Portal Vein Thrombosis



MPV



MPV

# New Pulmonary Embolus



# Therapeutic Dilemma

- GI Bleed

VS

- PV thrombus and PE

**Unable to anticoagulate**

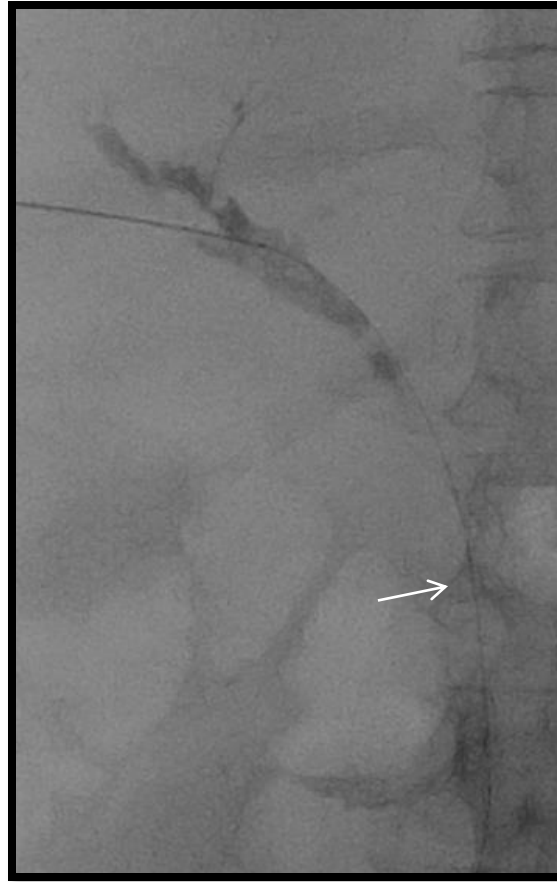
# Therapeutic Dilemma

- Varices drain from SMV and left iliac vein
  - Inflow and outflow both need to be targeted
- Portal vein thrombosis – access to portal system challenging
- **No surgical option** – not a surgical candidate

# PV Access Through Transhepatic Approach



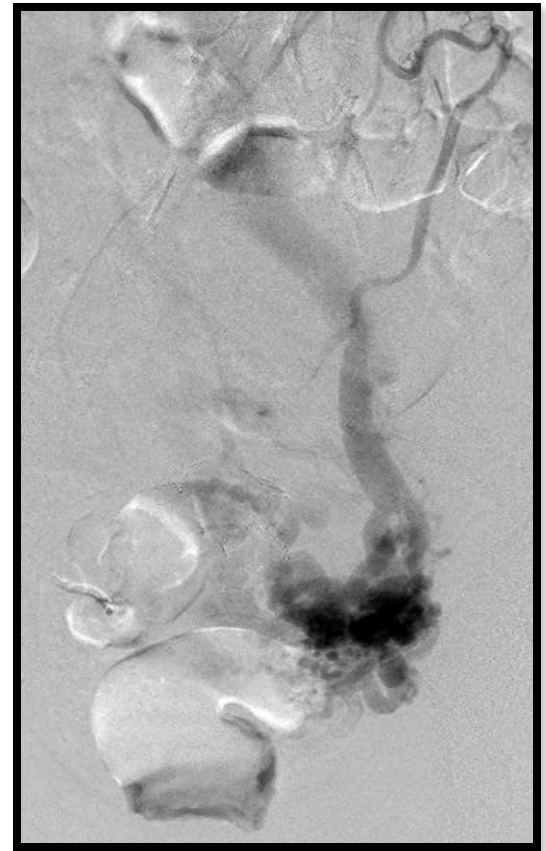
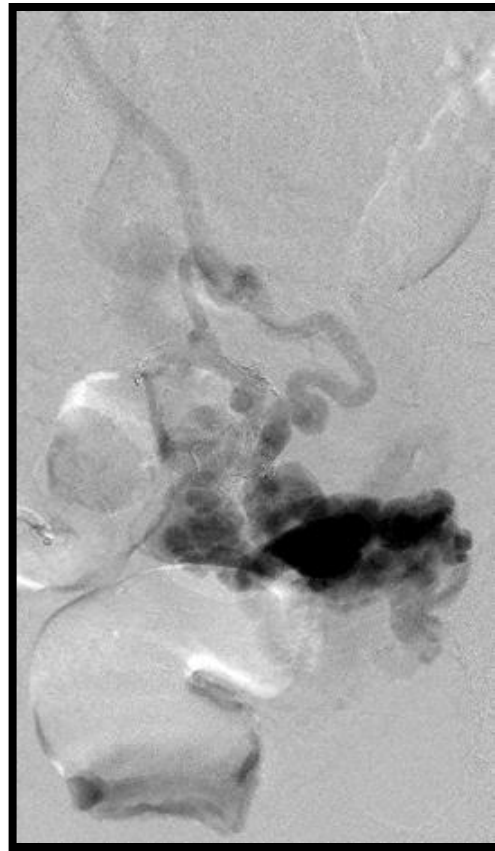
Trickle Flow



# Portal Venogram and Pharmacomechanical Thrombectomy



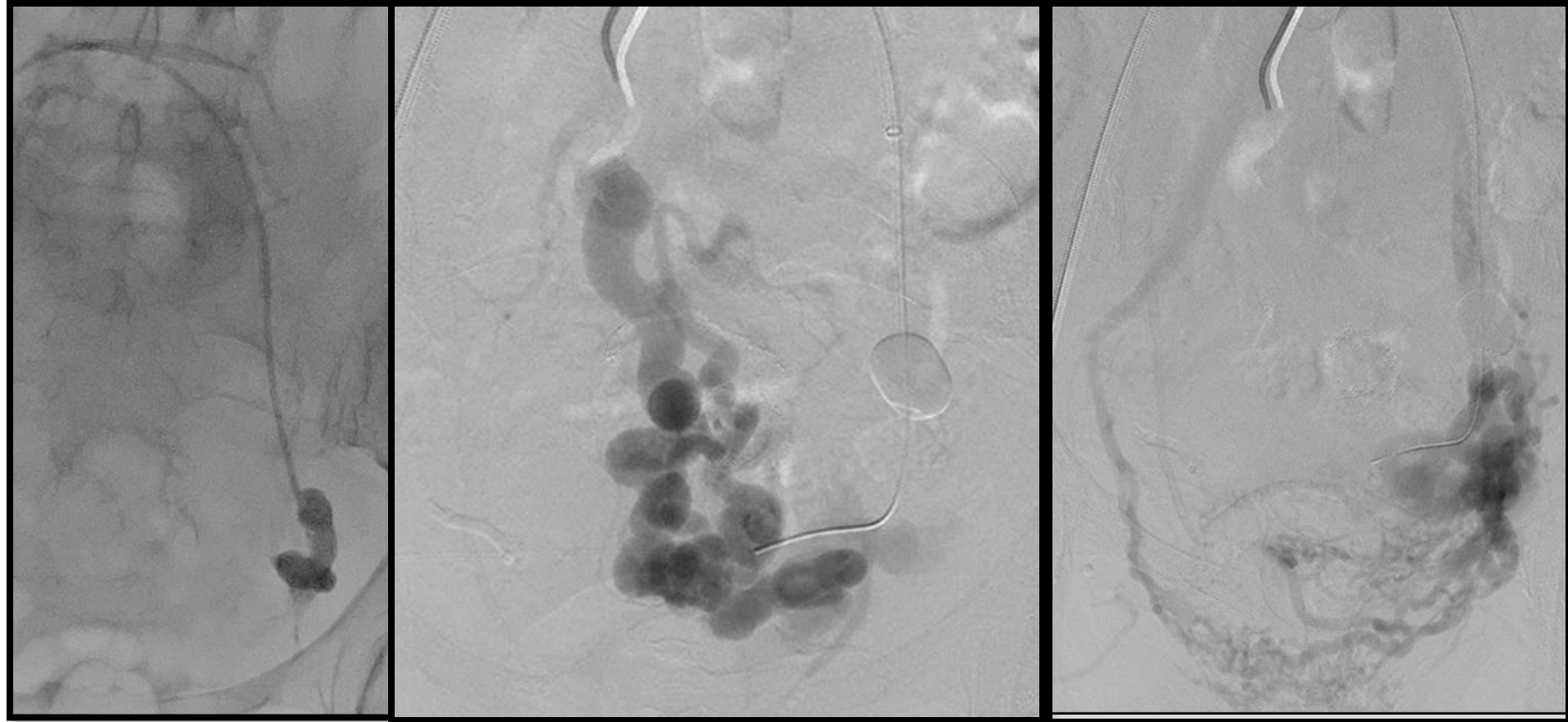
# Portal Venogram and Pharmacomechanical Thrombectomy



# Right Common Femoral Vein Access



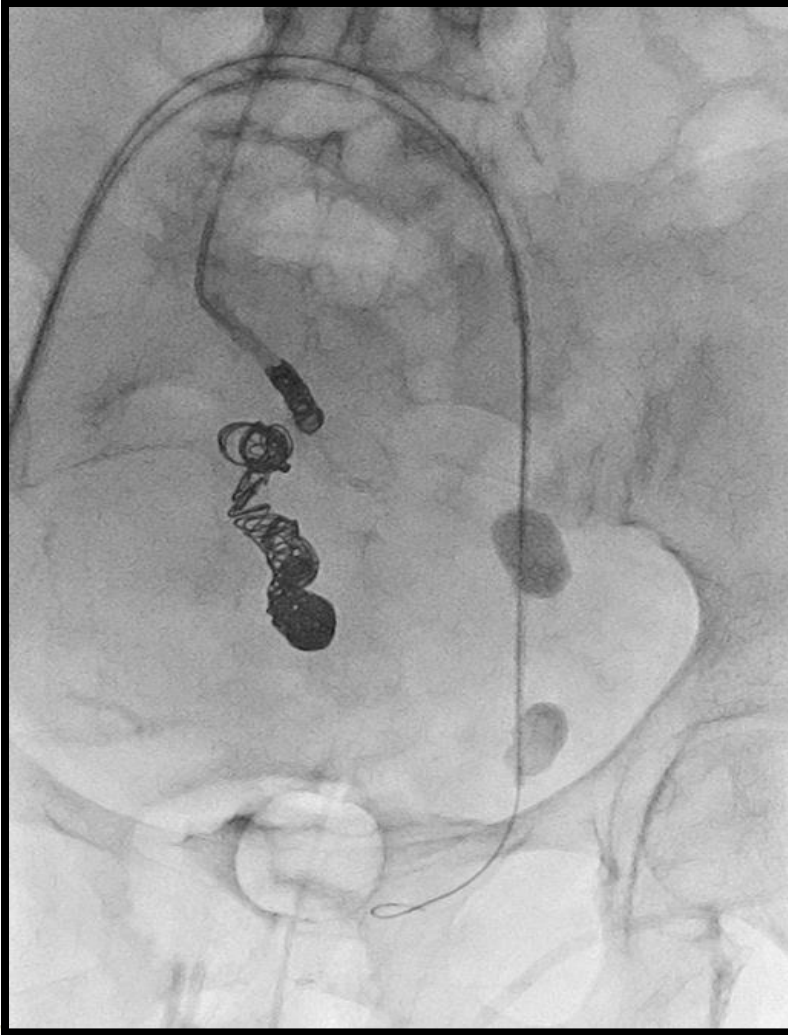
# Balloon Test Occlusion



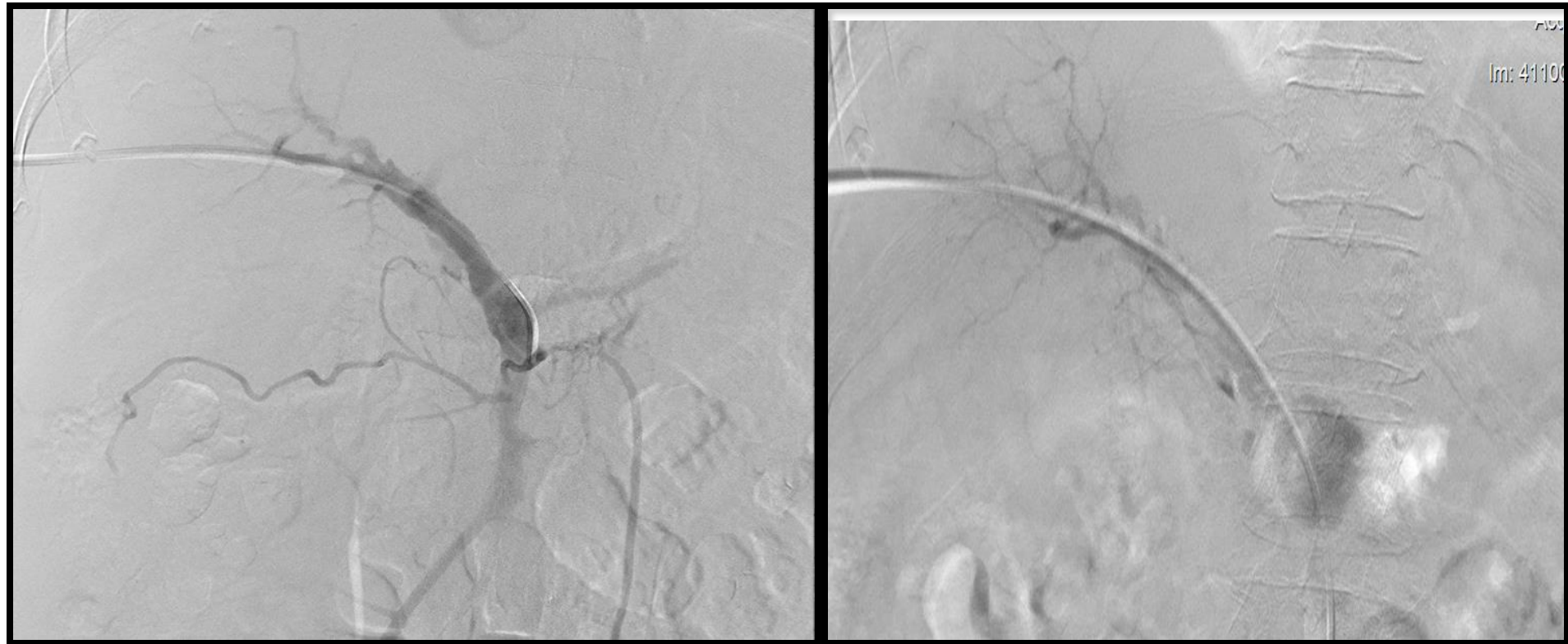
# 2<sup>nd</sup> Balloon



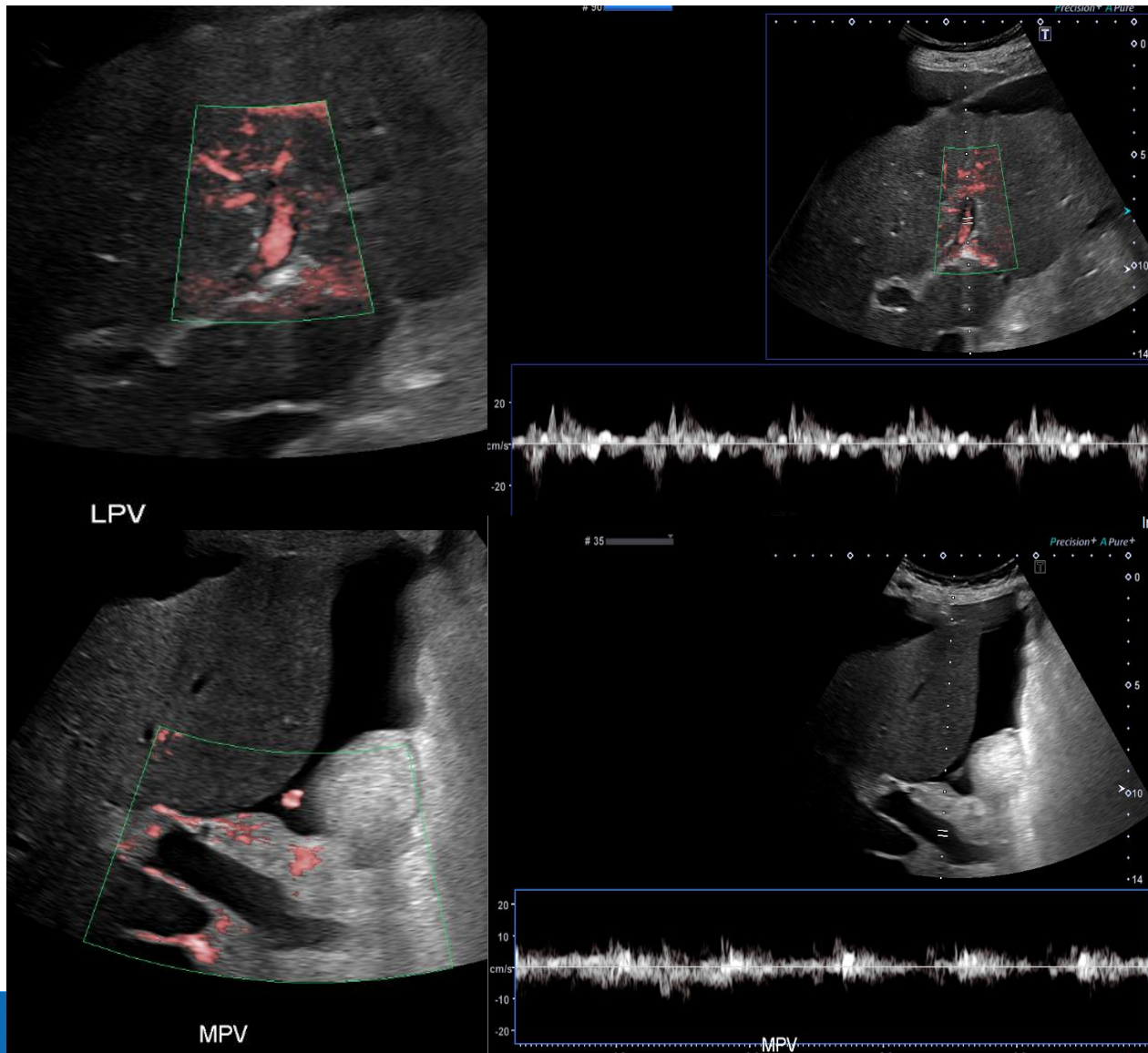
# Coils Through PV Access



# Anterograde Flow Through Portal Vein



# Slow Flow Through PV



# Clinical Status

- GI bleeding stopped, hemoglobin is stable, and patient is no longer transfusion dependent

# Discussion

- Therapeutic dilemma
  - **Complex varices** with GI bleeding, **PV thrombus**, and **pulmonary embolus**
  - Unable to reach site of bleeding on endoscopy – small bowel varices
  - **Unable to anticoagulate**
  - **No surgical option**
- Decision to **embolize** rather than TIPS
  - Portal vein thrombus and PE
  - Consideration of TIPS in the future

# Discussion

- Treatment challenges
  - PV access challenging given PV thrombus
    - Transhepatic approach successful
    - Option of trans-splenic approach
  - PV thrombus
    - Pharmacomechanical thrombectomy
      - tPA and Angiojet
  - Small bowel portosystemic collaterals
    - Extensive and complex with multiple feeding vessels
    - Portal vein and iliac vein access to embolize varices with Nester coils and 3% STS

# Key Points

- Intervention is not benign
  - PV thrombosis presented post 1<sup>st</sup> venogram vs. prothrombotic state (tranexamic acid administered)
- Pharmacomechanical thrombectomy in conjunction with variceal embolization is a viable option in management of patients with variceal GI bleed and PV thrombosis

# Key Points

- Role of the interventional radiologist as a consultant
  - Referring services may not be aware of various interventional therapeutic options

# References

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2. van der Hulle T, Kooiman J, den Exter P L et al. Effectiveness and safety of novel oral anticoagulants as compared with vitamin K antagonists in the treatment of acute symptomatic venous thromboembolism: a systematic review and meta-analysis. *J Thromb Haemost*. 2014;12:320–328
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4. Lahat, Eylon, et al. "Transjugular intrahepatic portosystemic shunt as a bridge to non-hepatic surgery in cirrhotic patients with severe portal hypertension: a systematic review." *HPB* 20.2 (2018): 101-109
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6. Bhavsar, Indira, et al. "Ectopic varices: a potential cause of gastrointestinal bleeding in patients with portal hypertension." *BMJ case reports* 2018 (2018): bcr-2018.