AMSER Case of the Month October 2023

69-year-old female with a history of colostomy placement presents with intermittent bleeding from her stoma site

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Patient Presentation

- **HPI**: 69 y/o female was referred to IR for intermittent stomal bleeding that began May 2022 status post colostomy placement in April 2022. She was admitted to an outside hospital throughout June and July for stomal bleeding with an eventual transfusion requirement of 5 units pRBCs. Endoscopy and colonoscopy were unremarkable for intraluminal bleeding. CTAP demonstrated a prominent Inferior Mesenteric Vein (IMV) leading to a stoma as well as a left inferior epigastric vein branch. The patient presented to IR hemodynamically stable.
- **Past Medical History**: HFpEF (~50%), NASH cirrhosis (MELD 21 on admission), AFib, HTN, DM, sigmoid perforation s/p end colostomy
- **Past Surgical History**: s/p end colostomy, b/l total knee replacement

Stoma site showing active bleeding and blood clots

Stoma site after cleaning showing peri-stomal erythema and discoloration

Physical Exam/Pertinent Labs

- **Physical Exam**
  - Abd: Active bowel sounds with slightly distended abdomen with ascites. Soft and nontender. Peri-stomal erythema and discoloration.
- **Labs**
  - Coagulation Panel
    - INR – 1.3
    - PT – 14.3
    - PTT – 26.8
  - CBC
    - Platelets – 140
    - Hemoglobin – 7.6
    - WBC – 2.5
  - CMP
    - Cr – 1.94
      - New AKI on admission
    - Potassium – 4.9
    - Bilirubin, Total – 0.3

What Imaging Should We Order?

Select the applicable ACR Appropriateness Criteria

Variant 4: **Lower GI tract bleeding. Intermittent or obscure nonlocalized recurrent bleeding. Next procedure/intervention (assumes prior negative endoscopy).**

Treatment/Procedure	Rating	Comments
Transcatheter arteriography/intervention (TAI)	4	Limited evidence for provocative angiography. Should only be done by expert team with experience in the technique.
Diagnostic/therapeutic colonoscopy	5	The utility of repeat colonoscopy depends largely on the character of bleeding and on the quality of the initial colonoscopy.
Surgery	3	
Tc-99m RBC scan abdomen and pelvis	7	
CTA abdomen with contrast	8	
MRI abdomen without and with contrast	2	
Capsule endoscopy	8	
Contrast small bowel radiography	2	Small-bowel follow-through is rarely helpful; enteroclysis requires an experienced provider.
Rating Scale: 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate		

This imaging modality was ordered by the inpatient medical team to evaluate source of bleeding coming out of the stomal site

Clinical Condition: **Radiologic Management of Lower Gastrointestinal Tract Bleeding**

Variant 1: **Lower GI tract bleeding. Active bleeding with hematochezia or melena in a hemodynamically stable patient. Next procedure/intervention.**

Treatment/Procedure	Rating	Comments
Transcatheter arteriography/intervention (TAI)	5	In the hemodynamically stable patient, colonoscopy is usually preferred as the first step; if there is active bleeding, TAI would be more likely to be beneficial.
Diagnostic/therapeutic colonoscopy	8	Upper endoscopy should also be considered in patients with brisk bleeding.
Surgery	3	
Tc-99m RBC scan abdomen and pelvis	7	Use of CTA versus nuclear study varies with institutional expertise.
CTA abdomen with contrast	7	Use of CTA versus nuclear study varies with institutional expertise.
MRI abdomen without and with contrast	2	
Rating Scale: 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate		

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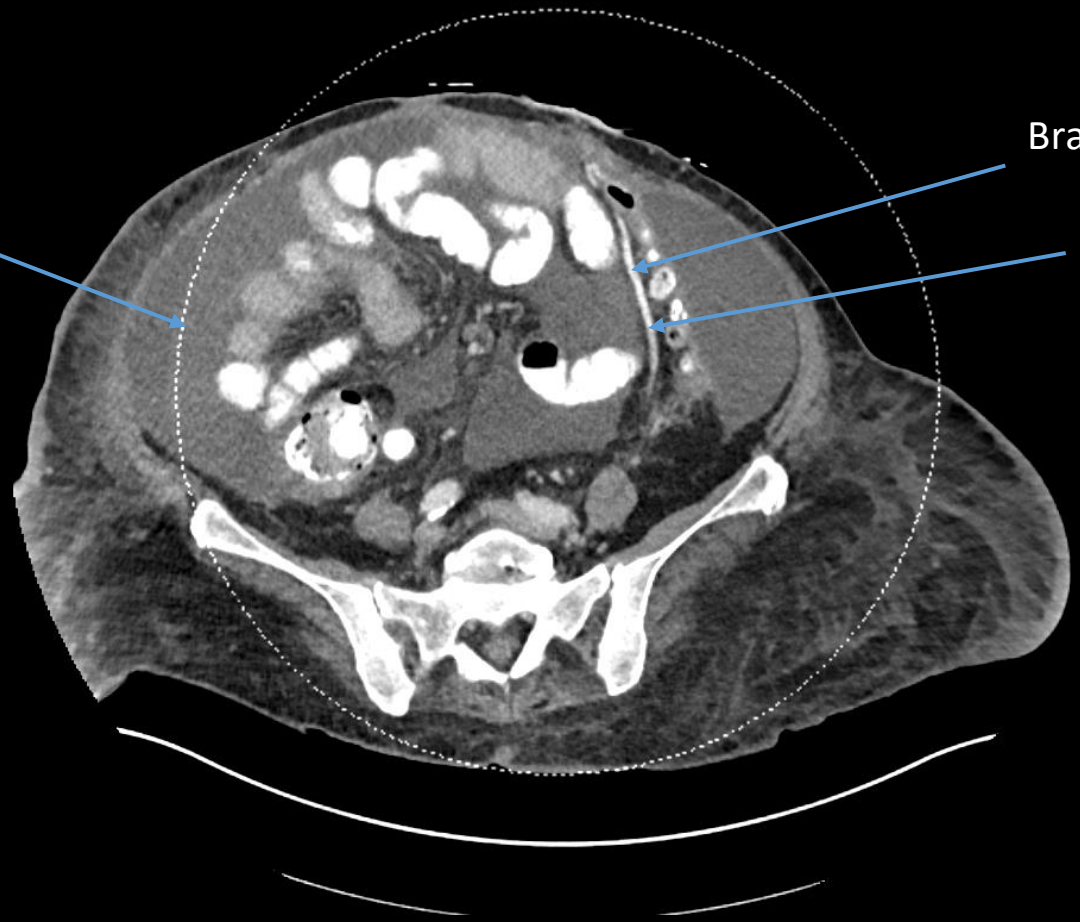
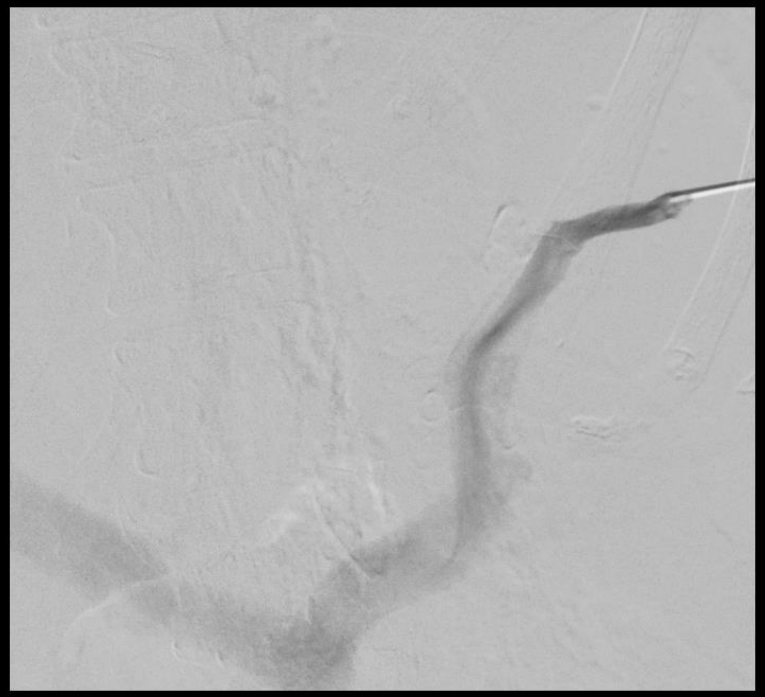
Findings (unlabeled)

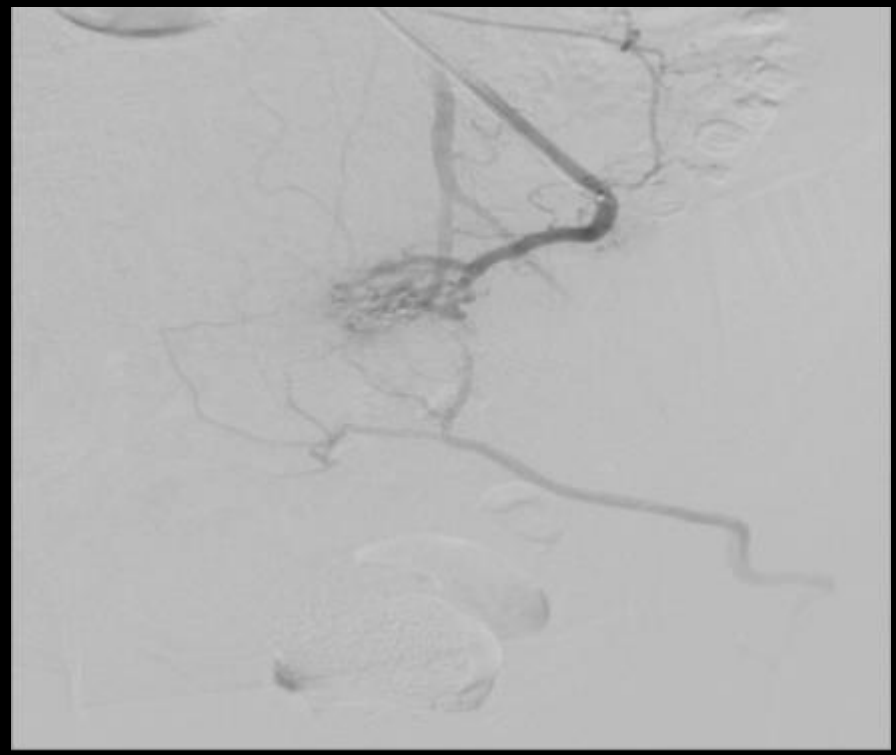
Contrast enhanced axial CT-portal venous phase

Findings: (labeled)



Findings (unlabeled)

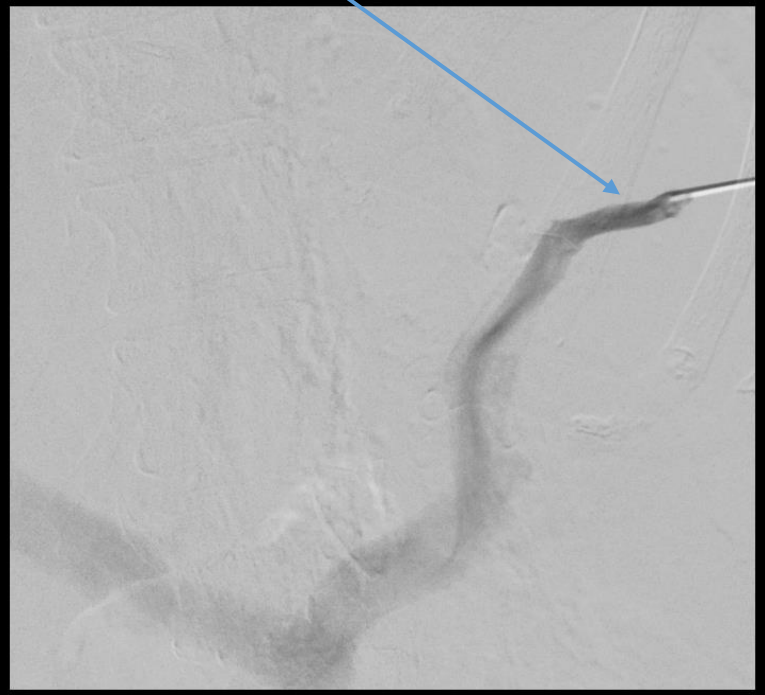




Digital Subtraction Angiography (DSA)

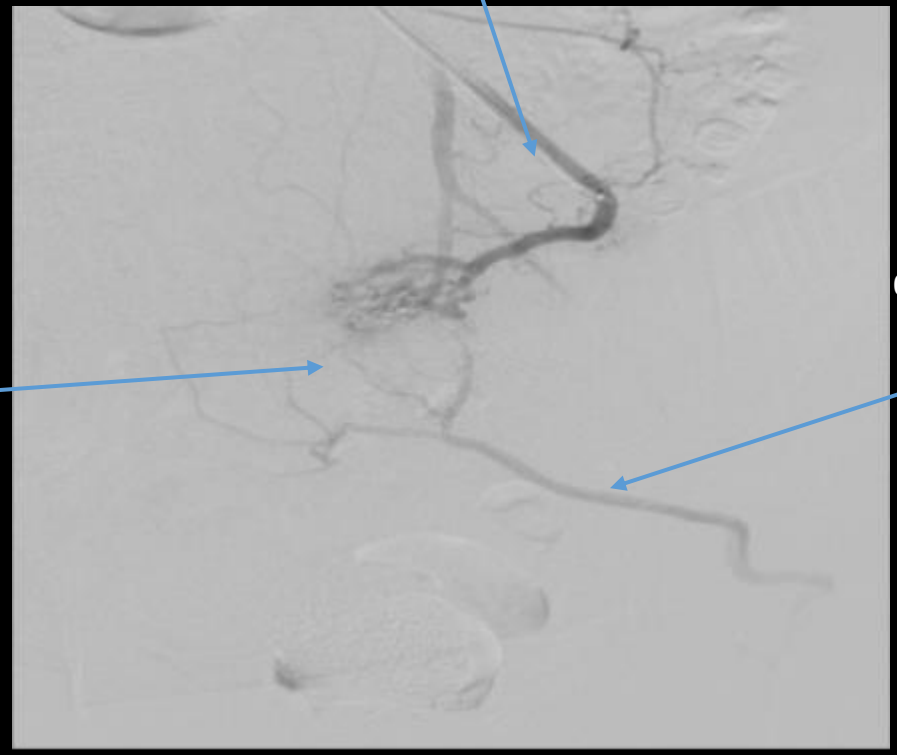
Findings (labeled)

Trans-splenic venography confirming access through the Splenic vein



Venography of afferent portal venous feeding branch off IMV

Venography showing supply to parastomal site



Efferent systemic venous draining vein branching from left inferior epigastric vein

Digital Subtraction Angiography (DSA)

Final Dx:

Parastomal Variceal Hemorrhage

Parastomal Varices

Background

- Portosystemic collateralization between the portal system of the stoma and the venous system of peristomal skin
- Usually in the setting of portal hypertension with a hepatic venous pressure gradient (HVPG) ≥12mmHg
- Rare, accounting for <5% of incidences of variceal bleeding

Risk Factors

- Alcoholic cirrhosis
- Inflammatory bowel disease

with progressive primary sclerosing cholangitis

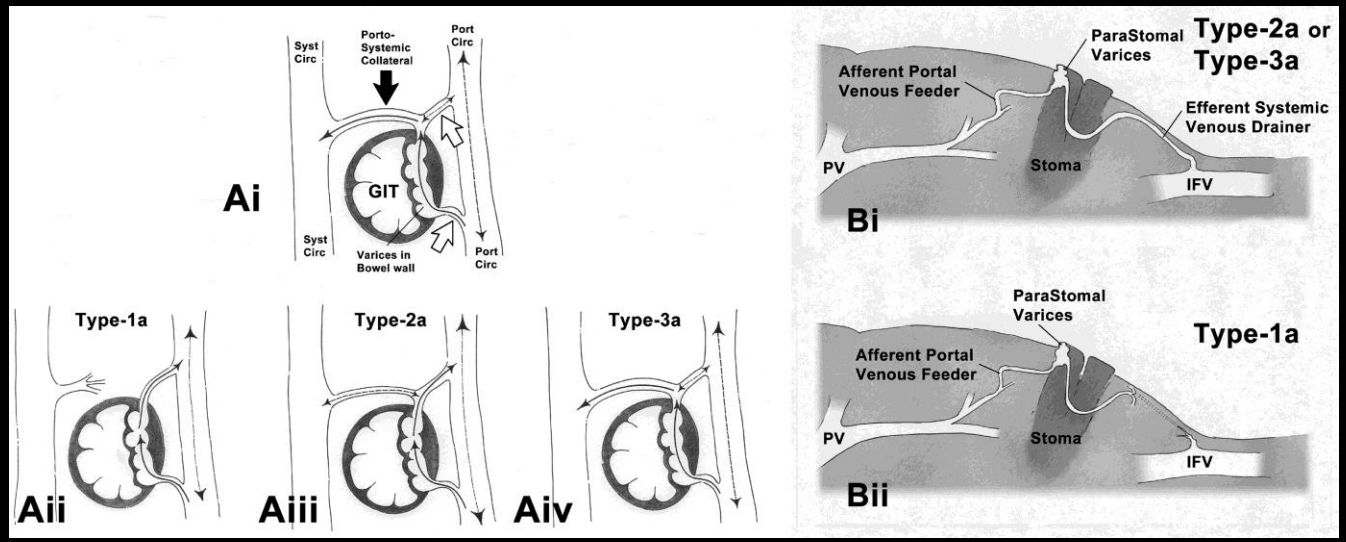


Image from article: Saad WE, Saad NE, Koizumi J. Stomal varices: management with decompression tips and transvenous obliteration or sclerosis. *Tech Vasc Interv Radiol*. 2013;16(2):176-184. doi:10.1053/j.tvir.2013.02.005

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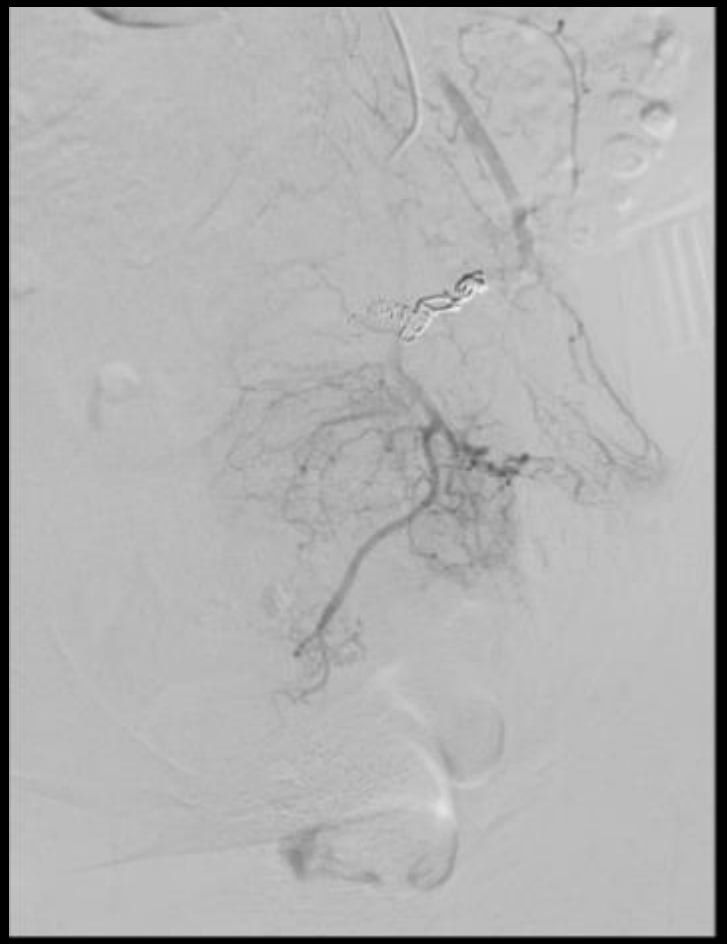
Diagnosis and Management

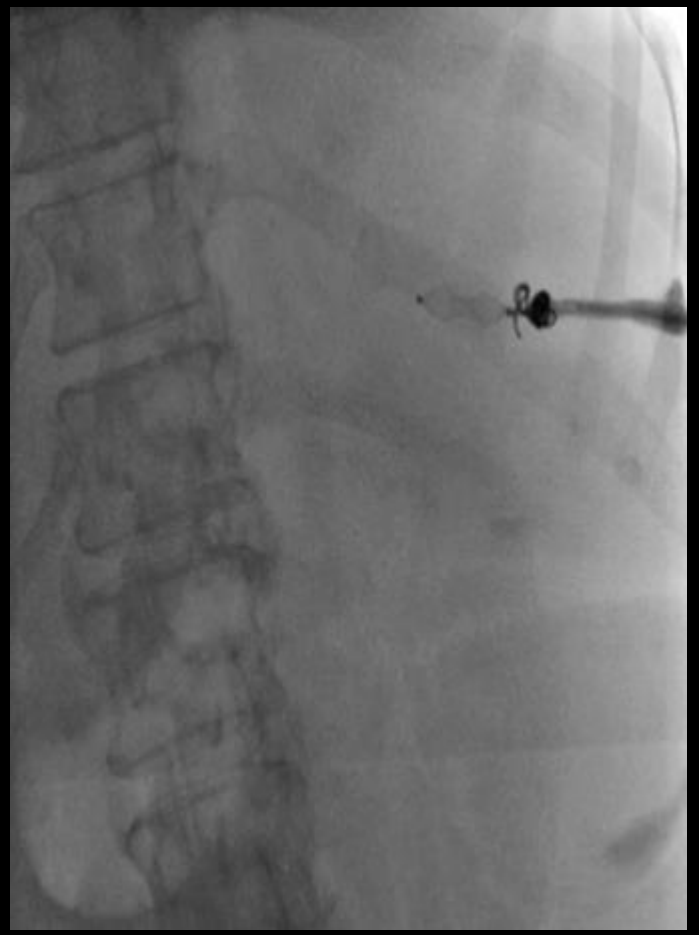
- Diagnosis
  - Venous phase contrast angiography or portal venography are the most helpful radiological investigations to confirm the diagnosis
- Management
  - TIPS
    - Reduced the likelihood of re-bleeding by 78.5%
      - Treatment group included TIPS with and without embolization, therefore the isolated impact of TIPS alone is unknown
  - Embolization alone decreased re-bleeding by 50%
  - Transvenous obliteration
    - Balloon-occlusion
      - Balloon-occluded anterograde transvenous obliteration (BATO)
        - Occludes portal venous side
      - Balloon-occluded retrograde transvenous obliteration (BRTO)
        - Occludes systemic venous side
    - Percutaneous mesenteric access
      - Use of 1% sodium tetradecyl sulfate STS sclerosant

Treatment of Our Patient

- Percutaneous access to the IMV branch supplying the stoma could not be performed due to overlying colon and ascites. Therefore, a trans-splenic route was selected.
- TIPS was contraindicated due to advanced liver cirrhosis.
- Coils were deployed into the afferent portal venous feeder off a branch of the IMV
- Repeat DSA showed successful embolization of afferent feeding branch and decreased flow through the systemic draining branch
- Amplatzer vascular plug and coils were deployed in the tract utilized for splenic vein access to decrease the risk of a splenic hematoma



Coils deployed decreasing flow to stoma site



Amplatzer plug and coils in splenic vein access tract

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