



SMA THROMBOSIS MASQUERADING AS NONSPECIFIC ABDOMINAL PAIN IN THE ED

Emergency Medicine

Dr. S. Shiva Kumar*

Post Graduate *Corresponding Author

Dr. Raja Benedict Assistant Professor

ABSTRACT

Background: Acute mesenteric ischemia due to superior mesenteric artery (SMA) thrombosis is a rare but life-threatening abdominal emergency with high mortality if not diagnosed promptly. **Case Presentation:** We report the case of a 47-year-old male who presented to the Emergency Department with sudden-onset severe diffuse abdominal pain (pain score 9/10) for one hour. He had no comorbidities and no recent risk factors apart from a prior COVID-19 vaccination one year earlier. Despite analgesia, pain persisted. Initial plain CT abdomen was normal, but subsequent contrast-enhanced CT revealed an irregular filling defect in the SMA with absent bowel enhancement and pneumatosis intestinalis. Abdominal aorta and celiac trunk were normal. The patient underwent urgent interventional radiology-guided angiography with successful thrombus retrieval. **Discussion:** SMA thrombosis accounts for 5–15% of mesenteric ischemia cases. Early clinical suspicion is crucial as symptoms may be disproportionate to examination findings. CT angiography is the diagnostic modality of choice. Prompt initiation of anticoagulation, supportive care, and endovascular or surgical intervention are key to improving survival. **Conclusion:** This case highlights the importance of early imaging and timely intervention in patients presenting with acute abdominal pain out of proportion to examination, where SMA thrombosis should be considered as a differential diagnosis.

KEYWORDS

Superior mesenteric artery thrombosis, Acute mesenteric ischemia, Abdominal pain, CT angiography, Endovascular thrombectomy, Emergency medicine

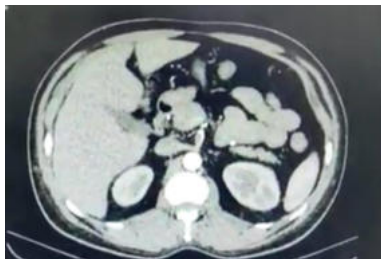
CASE REPORT:

A 47-year-old male patient came to the emergency department with severe abdominal pain for 1 hour, with sudden onset of diffuse pain. Pain score 9/10.

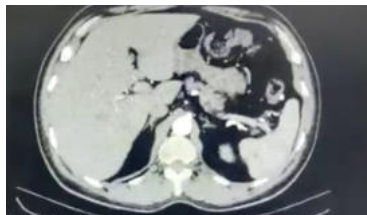
The patient reports a history of receiving a recent COVID vaccination (COVISHIELD) approximately a year ago.

No history of fever, hypertension, diabetes, and any associated comorbidities. Inj paracetamol

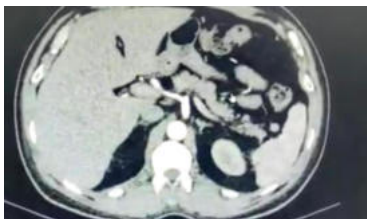
Inj tramadol Inj fentanyl Still, pain persists. Initially plain CT was done, which was normal. As pain persisted, patient was advised for CECT abdomen.



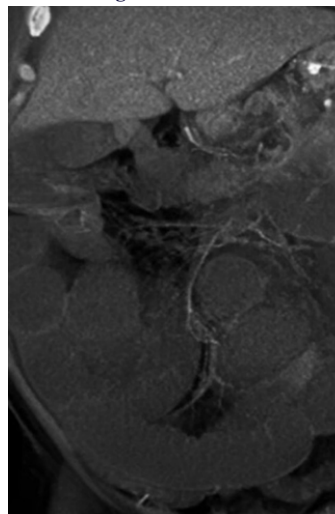
On Contrast (arterial phase) - an irregular filling defect noted in the SMA.



On contrast (arterial phase) – abdominal aorta appears normal with normal contrast enhancement.

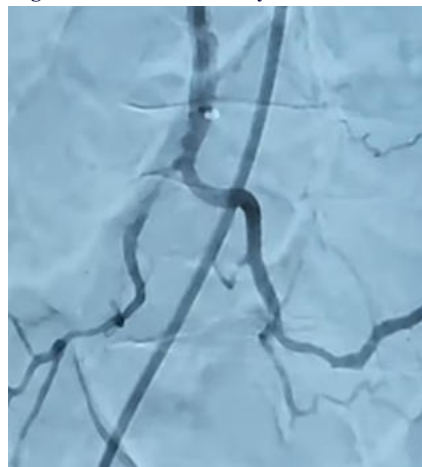


On Contrast (arterial phase) – Celiac trunk showing opacification with normal contrast filling.



After neutral contrast, there was no enhancement of the bowel. Pneumatosis intestinalis was seen.

Take for Angio thrombus recovered by intervention radiology



DISCUSSION

Introduction

- SMA thrombosis is a form of splanchnic venous thrombosis that can cause mesenteric ischemia, a life-threatening emergency.
- Accounts for ~5–15% of all mesenteric ischemia cases.

Etiology / Risk Factors

- **Hypercoagulable States:** Protein C/S deficiency, Factor V Leiden, antithrombin deficiency, antiphospholipid syndrome.
- **Local Factors:** Intra-abdominal infection (appendicitis, diverticulitis, pancreatitis, IBD), trauma, surgery.
- **Systemic Causes:** Malignancy, cirrhosis with portal hypertension, myeloproliferative disorders.
- **Idiopathic:** ~20–30% of cases.

Clinical Presentation In ED

- **Symptoms:**
 - Severe abdominal pain (often disproportionate to exam findings).
 - Nausea, vomiting, diarrhea, or GI bleeding.
 - Abdominal distension, ileus if advanced.
- **Signs:**
 - **Early:** minimal tenderness, soft abdomen.
 - **Late:** peritonitis (rebound, guarding) → bowel infarction.
- **Red Flags:** “Pain out of proportion,” metabolic acidosis, rising lactate.

Diagnostic Workup

- **Laboratory:**
 - **Non-specific:** leukocytosis, elevated D-dimer, metabolic acidosis, raised lactate.
- **Imaging:**
 - Contrast-enhanced CT abdomen (CT angiography) → modality of choice.
 - **Direct Sign:** filling defect in SMV.
 - **Indirect:** bowel wall thickening, mesenteric edema, ascites, poor enhancement (ischemia).
 - **US with Doppler:** operator dependent, limited sensitivity.
 - **MRI venography:** alternative in select patients.

Management In ED

1. **Resuscitation**
 - IV fluids, correction of electrolytes, oxygen.
 - Broad-spectrum antibiotics if infection suspected.
2. **Anticoagulation (mainstay)**
 - Immediate IV unfractionated heparin or LMWH.
 - Prevents extension, reduces recurrence, promotes recanalization.
3. **Pain & Supportive care**
 - Analgesia (avoid opioids masking worsening abdomen), nasogastric decompression if ileus.
4. **Definitive / Advanced management**
 - **Endovascular:** Catheter-directed thrombolysis, thrombectomy (in selected centers).
 - **Surgery:** Indicated if peritonitis or bowel infarction → resection of necrotic bowel ± second-look laparotomy.

Prognosis

- **Mortality:** 20–50% if diagnosis delayed (mostly due to bowel infarction).
- Early diagnosis + anticoagulation significantly improves survival.
- Many patients require long-term anticoagulation (minimum 6 months; lifelong if unprovoked or thrombophilia).

REFERENCES

1. Bala, M., et al. Acute mesenteric ischemia: updated guidelines of the World Society of Emergency Surgery (WSES). *World J Emerg Surg.* 2022;17(1):54. <https://doi.org/10.1186/s13017-022-00443-x>
2. Kärkkäinen, J.M., et al. Acute mesenteric ischemia is a more common cause than expected of acute abdomen in the elderly. *J Gastrointest Surg.* 2015;19(8):1407–1414.
3. Uhlmann, E.J., et al. High-value multidetector CT angiography of the superior mesenteric artery: what emergency medicine physicians and interventional radiologists need to know. *Radiographics.* 2019;39(5):1453–1471
4. Kärkkäinen, J.M., Acosta, S. Acute mesenteric ischemia (part I) – incidence, etiology, and mortality. *Scand J Surg.* 2021;110(2):145–154.