

# EMERGENCY MEDICINE CASES

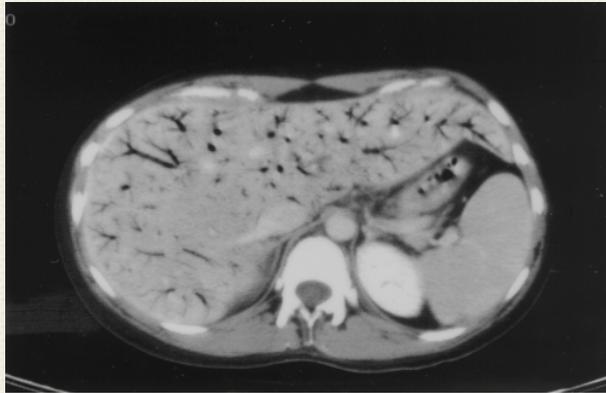


Fig 1: Portal venous gas on CT



EPISODE 42: ADULT ABDOMINAL PAIN PEARLS & PITFALLS (PART 1) WITH DR.

## Mesenteric Ischemia

Mesenteric Ischemia consists of 4 entities:

- 1) **Mesenteric Arterial Emboli:** commonly secondary to cardiac embolic source. Sudden onset abdominal pain, often presents with blood diarrhea
- 2) **Mesenteric Arterial Thrombosis:** caused by atherosclerosis of splanchnic vasculature. "Abdominal angina", commonly presents with post-prandial abdominal pain

- 3) **Non-occlusive Mesenteric Ischemia:** hypoperfusion to mesenteric vasculature due to low cardiac output or splanchnic vasoconstriction. May have blood in stool. Common in elderly, septic patients, patients on vasopressors

- 4) **Mesenteric Venous Thrombosis:** often secondary to coagulopathy. Non-specific abdominal pain, +/-diarrhea and anorexia

### Risk Factors:

- Age > 50
- Vascular risk factors
- Atrial Fibrillation
- Coagulopathy
- Low flow state (eg: septic shock)

**Classic Triad:** sudden onset of poorly localized abdominal pain 'out of proportion' to exam + gastric emptying (vomiting or diarrhea) in a patient with cardiac disease. **But** only a third of patients with AMI present with nausea, vomiting or diarrhea. In

### Laboratory Testing in Mesenteric Ischemia (1, 2)

- Lactate – can be normal early, sensitivity can be as low as 52% depending on stage of disease – do not rely on lactate to rule out mesenteric ischemia
- D-dimer – D-dimer has a 96% sensitivity in one study - Neg LR = 0.12 - higher sensitivity than lactate! poor specificity
- Amylase – can be elevated so don't be fooled into assuming pancreatitis
- Troponin often elevated & can mislead you to assume AMI and delay diagnosis of mesenteric ischemia

**Pearls:** 1. use a cognitive forcing strategy to consider mesenteric ischemia in every pt >50y/o and/or Afib with abdo pain  
2. ask about a history of post-prandial abdominal 'angina'

### Mortality/Morbidity:

High mortality (59-93%) associated with mesenteric ischemia. **Early diagnosis** and intervention associated with improved mortality and morbidity.

## Imaging for Mesenteric Ischemia

**Plain film:** Consider plain films if patient too unstable for CT. May see: bowel dilation, thumb printing, ileus, (often misinterpreted as mechanical bowel obstruction), pneumatosis in severe cases.

**CT:** Speak with radiology regarding protocol:

- Venogram – if suspicion of venous thrombosis
- Angiogram – if suspicion of arterial emboli
- Triple phase (plain, venous and arterial phase CTs) – increased sensitivity for mesenteric ischemia; but, increased radiation exposure

**Early CT Findings:** non-specific findings- bowel wall thickening, dilation, mesenteric edema, ascites  
\*pitfall would be to assume alternate Dx like infectious colitis

**Late CT Findings:** pneumatosis, pneumoperitoneum, gas

## Initial Management of Mesenteric Ischemia

- 1) Fluid resuscitation: can have massive 3<sup>rd</sup> space losses, +/- bleeding. Aggressive IV fluid resuscitation often required.
- 2) Antibiotics: consider broad spectrum antibiotics if patient presents with a septic picture
- 3) Anticoagulation (controversial): if embolic source, no urgent OR, and no bleeding, consider heparin
- 4) Early surgical consult
- 5) Pressors: try to avoid, but if required, choose pressors with least effect on splanchnic circulation (i.e. dobutamine/milrinone). Avoid epinephrine, phenylephrine because of vasoconstrictive effects.

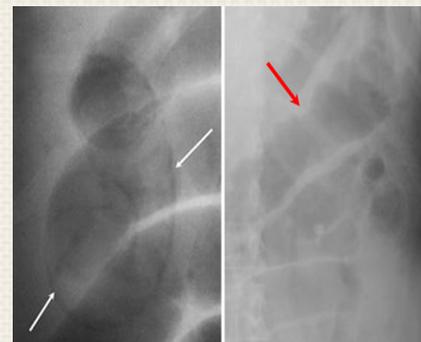


Fig 2: pneumatosis (white arrows), thumbprinting (red arrow)

## Post-ERCP Abdominal Pain

- Pancreatitis: worsening abdominal pain, amylase 3x upper limit of normal, usually presents within 24h of ERCP
- Infection: can have an ascending cholangitis
- Perforation: often retroperitoneal
- Bleeding

Rise in amylase should washout within 3 days of ERCP, lipase may stay longer. Can be affected by CrCl.

## Pancreatitis

**Presentation:** Epigastric pain, can be RUQ or LUQ with radiation to back, relieved by sitting up. Vomiting, +/- jaundice, abdo distension, ileus.

### Scoring Systems (3):

- APACHE II & Ranson Score ICU setting, not applicable to ED
  - CT severity index based on degree of pancreatic necrosis seen on CT- may help prognosticate
- BISAP score (Bedside Index of Severity in Acute ): 1 pt for: BUN >5, GCS <15, 2 or more SIRS criteria, age >60, pleural effusion. Score 0 = 0% mortality, > 5 = 22% mortality (moderate utility in predicting who may need ICU monitoring but does not help decide who can be discharged or if better than clinical gestalt)

### Causes:

- Alcohol pancreatitis: diffuse, gradual pain, usually AST > ALT (2:1 ratio)
- Gallstone pancreatitis: often RUQ

### Imaging:

- Ultrasound: helps determine if gallstones are the cause and if ERCP could be indicated.
- CT: can be normal within the first 48h; not best test to pick up gallstones;

### Laboratory Parameters (4,5):

Amylase: sensitivity (80%) -shorter t1/2 than lipase, therefore less reliable if presenting later in time course of disease.

Lipase: better sensitivity (90%) vs amylase for pancreatitis.

Absolute number of lipase or amylase does not correlate to severity of disease.

False elevation of amylase and lipase in renal failure.

Remember than Mesenteric Ischemia often increases amylase!!

## References (click for link)

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