THROMBO-EMBOLIC COMPLICATIONS OF INFLAMMATORY BOWEL DISEASE: NATURE, ETIOLOGY AND SIGNIFICANCE

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Background

• Patients with inflammatory bowel disease are at least 3 times more likely to suffer a thrombo-embolic event when compared to the general population.
• The incidence is approximately 0.1 – 0.5% per year.
• The overall mortality rate is estimated to be as high as 25% per episode.
• Postmortem exams reveal an incidence of 39-41% indicating that systemic thrombo-embolism is underdiagnosed.
• The thrombosis mainly occurs during disease exacerbation, however, surgery for proctocolectomy has not been shown to be preventative.

• Traditionally, venous thrombosis thought to be more common
• A recent retrospective review of the HUCP-NIS (health care utilization project – nationwide inpatient sample) database reported not only an increase in the incidence of this complication, but that arterial complications may happen more frequently than venous.

Patient 1

• 25 y/o female w/ Crohn’s disease s/p transverse colectomy one year prior who presented with right flank pain.
• Found to have right sided PE, right sided pulmonary vein thrombus and left atrial thrombus.
• Admitted for H/heparin, 4 days later developed abdominal pain and underwent abd CTA significant for SMA occlusion.
• Underwent open SMA thrombectomy.

4 patients in one institution over the course of one year

• Etiology not well known but thought to be multifactorial including a decrease in fibrinolytic activity, increase in platelet activation, and defects in the protein C pathway.
• Dyslipidemia and long term inflammation in IBD patients puts them at increased risk for formation of atherosclerosis.
• In addition, these patients lack vitamins, are often dehydrated, anemic, and at times, immobilized.

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Patient 1

Right pulmonary artery

Right pulmonary vein

Patient 1

SMA filling defect

SMA filling defect

Patient 1

• Returned to OR for 2nd and 3rd looks, and underwent subtotal colectomy and small bowel resection with end ileostomy during the 3rd operation
• Heparin held post-operatively due to significant post-op bleeding
• Over the next 3-5 days, patient developed progressive fevers and increasing WBC, found to have new SMA thrombosis on repeat imaging
• Returned to OR for resection of jejunum and remaining ileum.
• Went on to be transferred to outside facility for bowel transplant

Patient 2

Right EIA occlusion

• 59 y/o female presented days after a recent flare of ulcerative colitis with RLE pain and numbness x 1 day
• Found to have RLE acute limb ischemia, category III, attempt made at open revascularization with thrombectomy, however, pedal vessels were occluded and flow could not be re-established despite attempts from cut-down at multiple levels

Patient 2

RLE persistent tibial occlusion after open thrombectomy

• Subsequently underwent staged BKA
• Hospital stay complicated by colonic perforation due to colitis not responding to conservative measures
• Patient underwent subtotal colectomy and end ileostomy

Patient 2

• 69 y/o male presented with acute RLE pain and numbness x 1 day
• Found to have RLE acute limb ischemia, category III, attempted open revascularization with thrombectomy, however, pedal vessels were occluded and flow could not be re-established despite attempts from cut-down at multiple levels

Patient 2

RLE persistent tibial occlusion after open thrombectomy

• Subsequently underwent staged BKA
• Hospital stay complicated by colonic perforation due to colitis not responding to conservative measures
• Patient underwent subtotal colectomy and end ileostomy
62 y/o female with history of Crohn’s disease presents with recurrent symptoms and weakness
- Was severely anemic at presentation, underwent blood transfusion
- Also noted to have right leg pain and was found to have DVT
- She was started on anticoagulation but went on to develop flank pain and pain with urination; CTA revealed both right renal artery thrombosis and left renal vein thrombosis
- She later developed tachypnea and was found to have bilateral PE’s
- Patient was maintained on Coumadin given renal function remained normal
- Patient was treated medically for Crohn’s flare and underwent EGD and colonoscopy that demonstrated multiple ulcers with distribution consistent with Crohn’s disease

Patient 3

RCFV occlusion

Left renal vein occlusion

Right renal artery occlusion

Bilateral PE

SMV Occlusion

33 y/o male presented with flare of ulcerative colitis complicated by SMV thrombosis
- He was started on therapeutic anticoagulation and medical therapy for UC
- Patient failed medical management and went on to require subtotal colectomy with end ileostomy
- Patient improved and was maintained on therapeutic anticoagulation

Discussion
- These patients represent the catastrophic complications of atypical thrombo-embolic events occurring concurrently with IBD flares
- Patients with inflammatory bowel diseases are at an increased risk of both arterial and venous thrombotic complications that vary in presentation and may have devastating outcomes
- Questions to be answered:
  - If not, what treatment to recommend?
  - Medication choice?
  - Duration of treatment?

Conclusion
- These arterial and venous thrombotic complications occurring in the visceral vessels and peripheral arteries are likely underappreciated clinically as a risk associated with IBD flares
- These events demonstrate a need to look further at indications for thrombo-embolic prophylaxis
THANK YOU