

## LOWER G.I. BLEEDING - 2

- Definition: Bleeding originating distal to the ligament of Treitz
- Occult – iron deficiency anemia, positive guaiac but no visible blood/maroon stools as per patient or physician
- Overt – obvious bleeding seen by patient or physician
- Obscure – occult or overt LGI bleeding in which source is not identifiable by conventional means (endoscopy, angiography, nuclear scan)
- Source of bleeding age dependent
  - >60 – diverticulosis, angiodysplasia, cancer, hemorrhoids, ischemic colitis
    - Diverticulosis – vasa recta perforates colonic wall from serosal surface along connective tissue plane - common site for diverticula. Bleeding commonly occurs from right side. 90% stop spontaneously. 25% re-bleed
    - Angiodysplasia – frequently in cecum/right colon. Age-related degeneration of submucosal veins and capillaries. Symptomatic (bleeding) AVMs tend to rebleed (26% at one year, 46% at three)
  - <30 – Meckel's, intussusception, IBD, polyp
- Diagnosis
  - Diagnosis/localization is important for planning regional resection if required – mortality associated with emergency total/subtotal colectomy 50%
  - Gastric aspiration – Rule out upper GI source with NGT placement and aspiration. BRBPR from upper GI source is hemodynamically significant
  - Colonoscopy – Best candidates are bleeding minimally at the time of the study. Difficult in setting of brisk bleeding. Diagnostic capability decreases with increased time from acute bleed. Can demonstrate diverticulosis but not necessarily location of bleeding. AVMs difficult to detect
  - Nuclear Scan – Use of radiolabeled RBCs or sulfur colloid. Lacks spatial resolution and precision of angiography. Useful for intermittent or slower bleeds (100ml/min).
  - Angiography – Selective visceral angiography used in the setting of brisk bleeding (0.5-1ml/min or blood loss of 4-5 units/day). Can detect vascular patterns consistent with AVMs, can detect pooling of blood in diverticula
  - Provocative Angiography – Use of tPA, heparin during selective angiography to provoke bleeding. Used in the setting of an overt but obscure GI bleed
    - Duke University – retrospective review of 16 patients who underwent provocative angiography for occult LGI bleed (Ryan et al, Journal of Vascular and Interventional Radiology, 2001;12:1273-1277)
    - Age 44-79
    - Previous studies included endoscopy, angiography, nuclear scans (positive nuclear scans followed-up with angiography - negative)
    - Patients with contraindications to thrombolysis excluded
    - Catheterization of SMA or IMA depending on clinical suspicion of localization
    - Bleeding provoked with heparin, tolazoline and tPA

- If bleeding seen after 15 minutes, controlled with embolization
- Results – provoked bleeding in 6/16 patients (37.5%)
  - 4 patients with large bowel source (3 diverticular, 1 AVM)
  - 2 patients with small bowel source (ectasia and unknown)
  - 5/6 had positive nuclear scans but negative angiography- 3/5 nuclear scan and provoked angiography identified same lesion
  - 3/6 had embolization – 1 re-bleed from small bowel ectasia - resected operatively – final path lymphoma
  - 2/6 treated with estrogen therapy
  - 1/6 treated palliatively and died of MSOF
  - 10/16 patients – no bleeding with provocations but 2 patients with vascular lesions identified on provocative study (diagnosis made in 50% of patients) 5/10 re-bleed
- Intraoperative enteroscopy – used in the setting of obscure GI bleeding

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