Bowel Obstruction

Causes of mechanical obstruction:

1. **Intra-luminal:**
   - Neoplasm (either benign or malignant)
   - Gallstone ileum
   - Fecal impaction
   - Foreign body
   - Bezoar (hairball; trichobezoar, or some fruit fibers)
   - Parasitic infestation
   - Blood clot
   - Insipissated contrast material (if not taking plenty of fluid with barium; Barolith)

2. **Extra-luminal:** extrinsic compression by:
   - **Intra-abdominal tumors** known to attain large size: ovarian masses, mesenteric cysts, lymphoma ‘GEST’, cystic lesion of the pancreas, retroperitoneal ca
   - **Tumor cell deposits in the mesentery** -> which kinks the bowel and cause obstruction
   - **Hernias**:
     - **Internal**:
       - *Congenital*: foramen of Winslow: behind the hepato-duodenal ligament (which contains: CBD, portal vein, hepatic A)
       - *Surgically-created*: like in bowel resection leading to a defect in mesentery causing potential space for hernia, Petersen’s space caused by bariatric surgeries
     - **External**:
       - *Naturally occurring*: umbilical, para-umbilical, femoral, inguinal, obturator
       - *Incisional*: post laparotomy, or adhesions (MCC is post Op, or post inflammatory e.g. PID)

3. **Intramural**:
   - **Bowel volvulus**:
     - In order for volvulus to occur -> there has to be a free segment + fixation in 2 areas; most susceptible part is sigmoid colon
     - An emergency? b/c as the bowel twists, the mesentery twists and w/ it the blood supply -> causing ischemia, gangrene, perforation
   - **Intussusception**:
     - More common in pediatrics -> treated w/ contrast enemies by which the pressure opens the obstruction
     - But in adults, usually there's a lead-point of anatomical pathology which is usually tumor -> reducing it is no enough, so you need to scope/operate
   - **Inflammatory**:
     - Acute exacerbation of crohn’s due to inflammation and edema -> here, resist the temptation of operation, why? b/c you’re putting anastomosis in an inflamed area -> high risk of leak (130%). So treat with nasogastric suctioning, TPN, maximize anti-crohn's treatment -> most of them will open up in few days
     - But chronically, if not taken care of -> you will heal w/ fibrosis. So treatment here is surgical
   - **Ischemia**: "what doesn't kill you makes you stronger"
     - If not transmural -> you will recover by fibrosis and adhesions, and thus; causing obstruction
Cardinal features: abdominal pain, distension, vomiting, and constipation
- **If proximal obstruction**: crampy abdominal pain followed by early vomiting, but normal bowel movement and minimal distension
- **If distal obstruction** (recto-sigmoid): crampy abdominal pain followed by early constipation and massive distension, vomiting is absent/late

**The ability to pass bowel motion is by no means a guarantee against obstruction, why?**
1. The bowel content beyond the level of obstruction
2. W/ few days of stool stasis -> the body tries to liquefy it to clear the way -> diarrhea

- Bowel sounds are usually increased (high pitched) in bowel obstruction
- But, if persistent obstruction -> causes perforation; so after a certain period where the bowel can't overcome the obstruction -> it will stop contracting - > decreased bowel sounds
- **Q**: 2 pts w/ bowel obstruction, one w/ increased bowel sounds, the other w/ absent/decreased bowel sounds. Which one you'll be more worried about? The one w/ the silent bowel (b/c it might be peritonitis)
- Dehydration, electrolyte imbalance (which need to be corrected before surgery!)

**Approach to a case of bowel obstruction:**
1) Is it obstruction or not?
2) What's the likely level of obstruction?
3) What's the likely cause?
4) Partial or complete?
   - Still passing stool = partial obstruction
   - No bowel movement for > 24 hrs; obstipation = complete obstruction
5) Simple or complicated?
   - Compromised blood flow (ischemia, gangrene, perforation)
6) Any systemic manifestations caused by that obstruction?
   - Dehydration, electrolyte disturbances, hemodynamic instability, renal impairment (pre-renal azotemia)

**CASE**: A 24 yo lady, underwent appendectomy at the age of 14, now presenting w/ partial distal adhesive small bowel obstruction, no peritoneal signs (=simple obstruction), mild-moderate dehydration and electrolyte disturbances. What is the appropriate treatment?
Conservative therapy: Fluid/electrolyte replacements, nasogastric decompression - > w/in 2-3 days, majority of the patients open up

**CASE**: A 65 yo male, presenting w/ intermittent PR bleeding over 4 mo, wt loss, obstipation for 24 hrs, massive abdominal distension, vomited once. What to do?
This is a complete bowel obstruction at the level of recto-sigmoid or left colon (b/c of PR bleeding. If presents w/ anemia - > right bowel): most likely malignant tumor, and it won't improve w/ conservative treatment

**References:**
- Dr Alabeidi’s lecture
- Monte Reid