Intestinal Obstruction

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Small Bowel Obstruction

Causes:

1. Adhesions (post Op): 60%

- 50% occur within 1 year post op —> 20% of them within 1st month
- 25% occur 1-5 years post op
- 25% occur 5-25 years post op
- 36-60% require laparotomy
- 11- 21% recurrent SBO after lysis of ahdesion

Causes:

2. Incarcerated hernia —> 10%

- The most common cause in virgin abdominal

3. Tumor —> 20%

- Primary or metastasis
- Intraluminal or extrinsic compression

Causes:

4. G.S ileum —> 3%
5. Radiation fibrosis
6. Crohn’s disease —> 5%
7. Intussusception

Diagnosis:

- You should establish a Dx of SBO by Hx, Px, x-ray, CT
- Symptoms —> n,v, campy abd pain, obstipation
- Px —> distended abd. , +++ B.S , peritonitis in strangulation or
- AXR —> distended S.B, AFL, No air in rectum.

The clinical feature depend on:

After you establish a dx. Of SBO you should assess these factors:

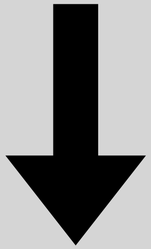
1. Level of obstruction
2. Degree of obstruction—> low grade —> air in rectum

   —> high grade —> no air in rectum
3. Duration of obstruction
4. Amount of distension

Contrast studies

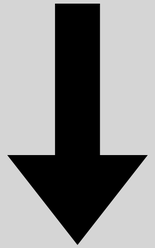
- Indicated in patient SBO with failure to resolve (enteroclysis) —> to determine site & degree of obstruction

Contrast passed



Continue conservative management

Delayed passage & distended proximal



OR

CT

- Sensitivity & specificity —> 90%
- Determine:
    - site (transition zone)
    - Masses
    - Hernias
    - Features of strangulation —> edema , enlarged bowel
- Strangulation —> good sensitivity by CT but poor specificity with false + rate 25%
- Timing for CT:
    - Some advocate for initial CT at presentation
    - others recommend obtaining CT if no improvement after 24 hours NGT

Management:

8 clinical scenarios

1. Complete SBO
2. High grade partial SBO
3. Low grade partial SBO
4. Virgin abd with SBO
5. Recurrent SBO
6. Post op SBO
7. Malignancy-related SBO
8. Crohn’s-related SBO

Management

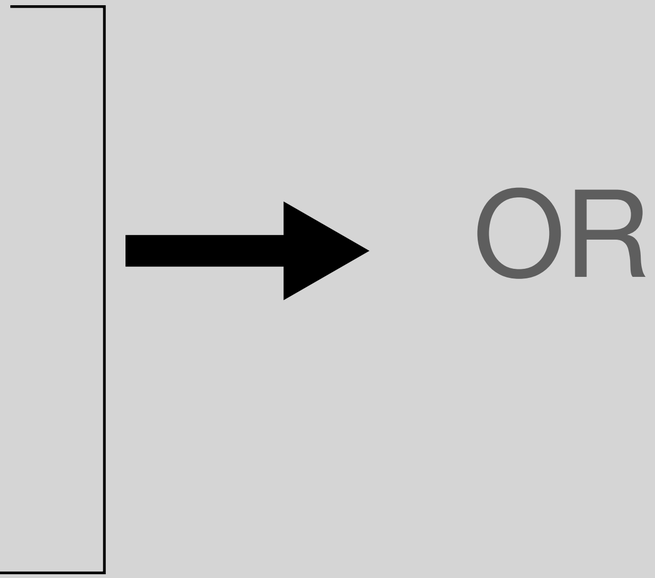
Initial management

- Fluid resuscutation & main. (NS + K) —> patient has ↓Cl, ↓K, metabolic alkalosis
- NGT, Folly
- Pain meds —> controversial esp if the Dx is unclear
- Use of routine Abs —> controversial, but generally No evidence

Management

1) patients with complete SBO —> 80% will require surgery

- Significant distended bowel, hx of obstipation for at least 12 hours, no recent improvement —> OR
- Increase risk of strangulation
  - High WBC
  - Fever
  - Severe pain
  - Tachycardia



Management

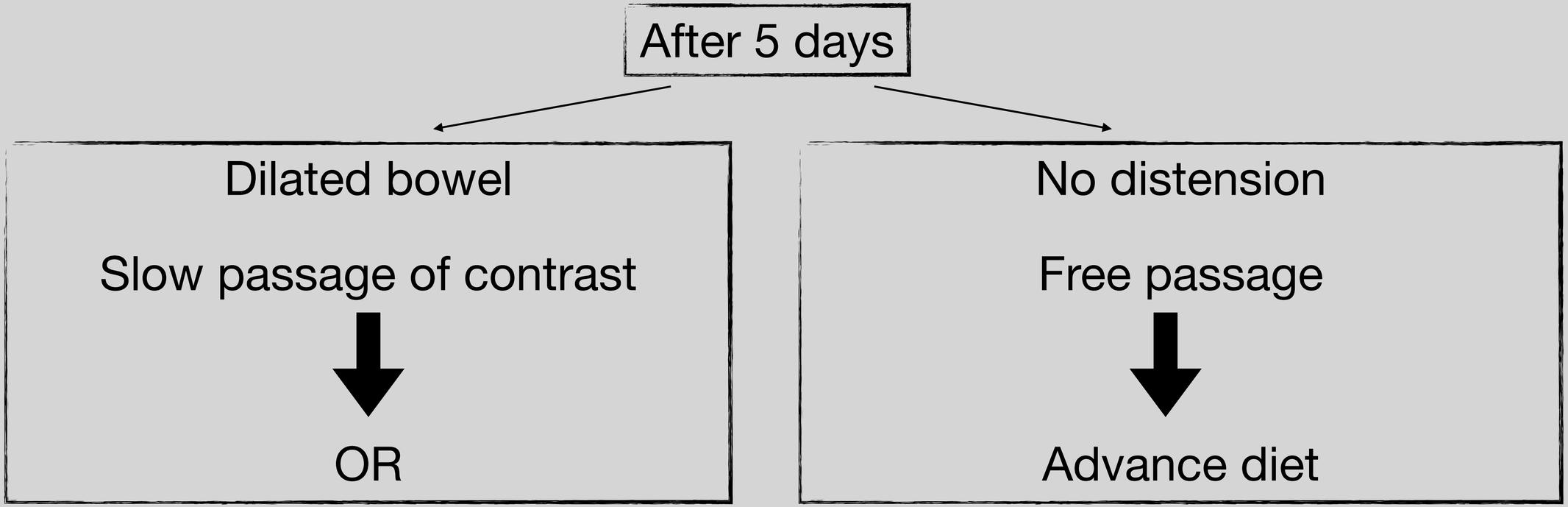
2) patients with high grade partial SBO —> 10-15% will require Surgery

- Significant distended bowel, crampy abdominal pain, +ve air in rectum on AXR, recurrent hx of passing flatus.
- —> admit for observation with serial and exam & serial AXR Q 8-12 hrs.
- If no improvement within 24-48 hrs —> Ct then OR

Management

3) patients with low grade partial SBO

- Low abd distension, recurrent + gas or stool but continue to have cramps and pain —> became symptomatic upon oral intake
- —> they can be watched for 5-7 days
- —> benefit from enterocylsis



Management

4) Virgin abdomen with SBO —> CT then OR

Incarcerated hernia

- Should be repaired at OR for SBO

a) Strangulated bowel

↓

temporary absorbable mesh

↓

permanent mesh later

b) No strang. bowel

↓

permanent mesh

Tumor

↓

Resection

Intussusception

↓

Resectioon

Crohn's

↓

Resection

- Primary repair vs stoma
- Depend on
  - —> degree of bowel obstruction
  - —> general condition of the patient and bowel

Management

5) post op SBO

- Immediate SBO post op usually resolves within 10-14 days
- Rx usually conservative:
    - NPO
    - NGT
    - IVF
    - Short term TPN

Management

6) Recurrent SBO

- Usually hx of previous surgeries (some of them is lysis of adhesions)
- Try to avoid OR in these patients especially in patients with hx of successful conservative management in the past
- Wait for 10-14 days —> if no improvement —> OR
- 2 options may be used in order to decrease recurrence:

    —> absorbable barrier —> Septra

    —> long intestinal tube with balloon at the end (brought to and wall as ostomy —> milking of the intestine —> left in place for 2-3 weeks then withdraw slowly over 5-10 minutes)

Management

7) Crohn's-related SBO

- Usually patients present with previous SB resections
- Usually SBO is not complete
- **Contrast study** —> if new site + the sx is recurrent —> attempt conservative Mx—> if no improvement for 7-10 days —> OR
- Conservative Mx:
    - TPN
    - NPO
    - Steroids

Management

8) malignancy-related SBO

- Patients present with this hx:
- 30% have adhesions from malignancy causing the obstruction —> Rx: Lysis
- 30% the tumor is obstructing —> Rx: Resection
- 30% carcinomatosis is obstructing —> No Rx
- **So in summary —> causes of obstruction in malignancy-related SBO:**

    1. Adhesions 30%
    2. Tumor 30%
    3. Carcinomatosis 30%

Management

Operative management and tech. Consideration:

1. Timing of OR is important
    1. E.g.: —> post op SBO —> 14-16 days (to avoid poorly defined, vascular adhesions)

        —> low grade partial SBO —> 3-4 wks (adhesions —> filmy, decrease vascularity)
2. Generous midline incision with point of entry in an area that hasn't been entered before to avoid bowel injury
3. Try to avoid cautery in division of fascia in reoperative sx
4. Assess viability of the bowel (if large amount of bowel involved) —> deeply dusky , thickened —> apply warm packing for 5-10 min —> if still dusky —> doppler US for arterial pulse

    —> (+ve) —> observe for another 5-10 min

    —> (-ve) —> fluorescing dye IV with woods lamp to assess blood supply

    - If small area of bowel involved —> resection.

Management

Operative management and tech. Consideration:

5. Adhesiolysis —> always move from easy to difficult areas

6. If any entrotomy or serosal tear occurred during adhesiolysis —> fix first before proceeding.

7. After adhesiolysis —> decompress the bowel by milking it cephalad to NGT

8. Run the small bowel again looking for missed injuries

9. Put momentum between bowel and fascia before closure

10. Sepra film between momentum and fascia

Management

Laparoscopy for SBO

- **Indication:**
    1. Chronic partial SBO (not severely distended bowel)
    2. Acute partial SBO failed conservative management (not severely distended)
    3. Complete SBO in pts without severely dilated bowel, no peritonitis
    4. Pts with incarcerated hernia (some evidence)

Management

Laparoscopy for SBO

- **Contraindication:**
    1. Massively dilated, thin-walled SB
    2. Multiple previous laparotomies
    3. Early post OP SBO
    4. Peritonitis
    5. Evidence of pneumocystis intestinalis

- **Conversion —> if evidence of ischemia, stricture or other complicating factors**

Large Bowel Obstruction

Large Bowel Obstruction

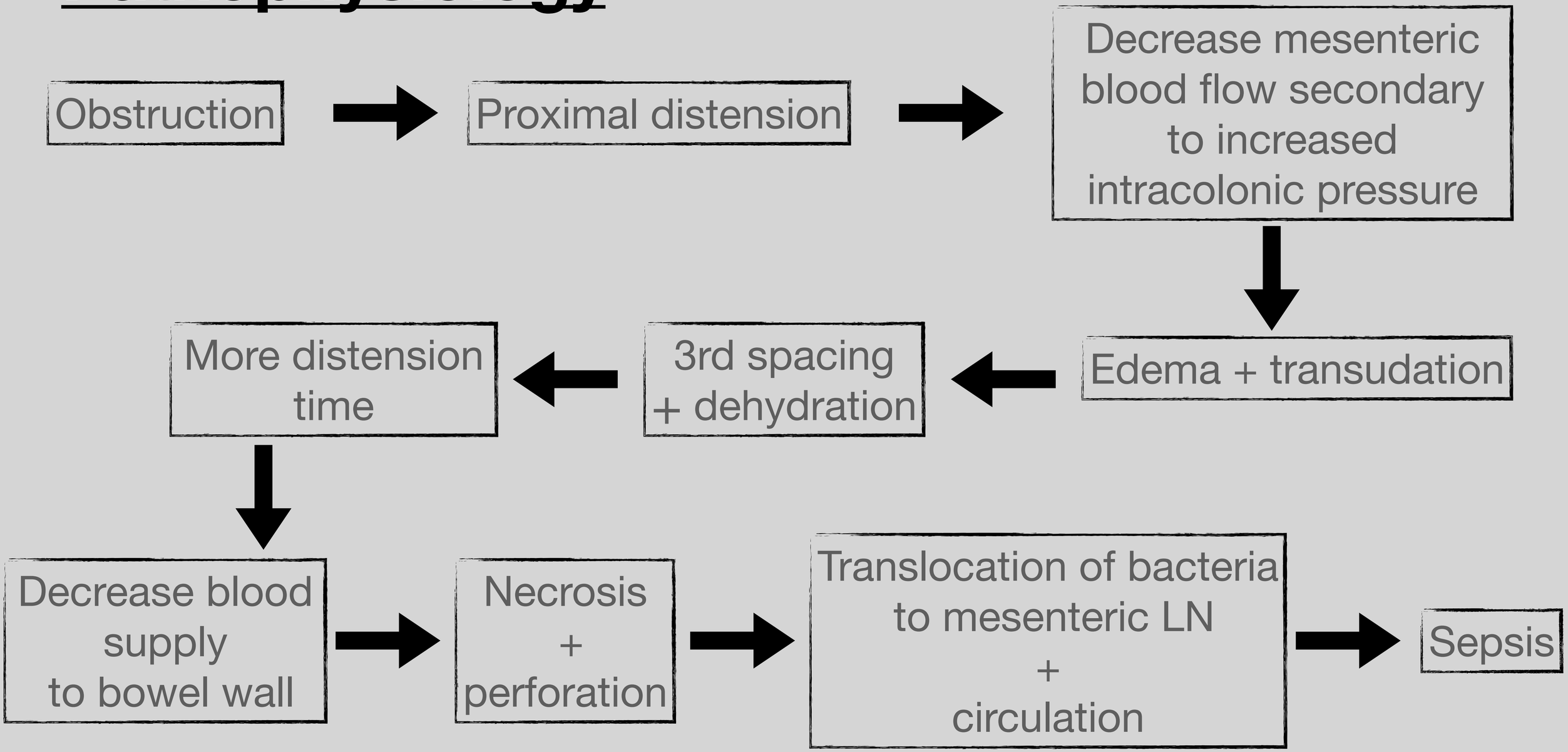
Dynamic (mechanical)

1. Colon cancer 90%
2. Volvulus 5%
3. Diverticular disease 3%
4. Other:
    - Stricture (IBD)
    - Hernia
    - Fecal impaction
    - FB
    - Adhesions

Adynamic (Ogilvie's)

- Autoimmune dysfunction
    - Cardiovascular
    - Traumatic
    - Post OP
    - Inflammatory
    - Respiratory
    - Metabolic
    - Neurological
    - Pharmacological

Pathophysiology



Management

Operative management

- Surgical options depends on:
    1. Cause
    2. Location of obstruction
    3. Perinotenial contamination
    4. Condition of proximal colon
    5. Concomitant disease
    6. Pt condition
    7. Surgeon operative skills

Management

Special Rx

1. **Right colon cancer (obstructing)** —> resection + primary anast. (Rt. Hemi.)
    - No significant difference in anastomotic leak between pts with obstructing Rt. Colon Ca. vs. non-obstructing Rt. Colon Ca.
    - If pt is critically ill —> resection + ileostomy + MF

Management

Special Rx

2. **Left Colon Cancer (obstructing)** —> 5 options:
    1. Resection + IO colonic lavage + Primary anastomosis
    2. STC +/- Anastomosis
    3. Hartman's procedure
    4. Proximal diversion
    5. Laser ablation, stenting, tube decompression

- Pts with disseminated colon Ca. —> best treated by resection (best palliation but no increase in survival)

Management

Special Rx

3. **Sigmoid Volvulus**

- Colonic decompression
- Cant do decompression or unstable pt
- Mesosigmoidoplasty

Management

Special Rx

4. **Cecal Volvulus**

- OR

—> viable colon —> R hemi. + primary anas. (Rx of choice)

—> not viable —> R hemi. + ileostomy + mucus fistula

—> other options:

- Cecostomy tube
- Cecoplasty

Management

Special Rx

5. **Diverticular disease**

- Abscess Rx by:
    - NPO
    - IV ABX
    - Percutaneous drainage
    - Resection + primary Anast.
- Perf + fecal contamination —> Hartman's
- Repeated diverticulitis —> fibrous stricture —> Rx by on table lavage + resection + primary anast

Management

Special Rx

6. **Colonic pseudo-obstruction**

- Initially Rx by:
    - NPO
    - IVF
    - Lytes correction.
    - Gentle enemas.
    - Rx of underlying causes
- If resolved—> no further action.
- If persistent dilatation with cecum >11 cm
    - Colonoscopies decompression—> success 75-90% recurrence 15 % need to repeat colonoscopy.
    - Pharmacological manipulation

Management

Special Rx

6. **Colonic pseudo-obstruction**

- Rx:
  - Neostigmine
  - Guanethidine
  - Erythromycin (mostly against)
- Blowhole colostomy —> if above Rx failed
- Perforation or peritonistis in Ogilvies —> Hartman’s

Management

Special Rx

6. **Colonic pseudo-obstruction**

- Pts with previous low anast. Resection or APR for rectal Ca. Who received radio Rx. Presented with bowel obstruction:

- **Ddx:**

    1. Adhesions
    2. Recurrence
    3. Radiation enteritis

Thank you