BOWEL OBSTRUCTION AND VOLVULUS

INTESTINAL OBSTRUCTION IS THE INABILITY OF THE INTESTINAL TRACT TO ALLOW FOR REGULAR PASSAGE OF FOOD AND BOWEL CONTENTS SECONDARY TO MECHANICAL OBSTRUCTION OR ILEUS

ADYNAMIC (PARALYTIC) ILEUS IS MORE COMMON BUT IS USUALLY SELF-LIMITING

MECHANICAL OBSTRUCTION CAN BE CAUSED BY EITHER INTRINSIC OR EXTRINSIC FACTORS AND GENERALLY REQUIRES DEFINITIVE INTERVENTION RELATIVELY QUICKLY

DIFFERENTIATING SMALL AND LARGE BOWEL OBSTRUCTION IS IMPORTANT BECAUSE THE INCIDENCE, CLINICAL PRESENTATION, EVALUATION AND TREATMENT VARY DEPENDING ON THE ANATOMIC SITE OF OBSTRUCTION

COMMON CAUSES OF OBSTRUCTION OUTLINED BELOW:

Table 86-1 Common Causes of Intestinal Obstruction

Duodenum	Small Bowel	Colon
Stenosis	Adhesions	Carcinoma
Foreign body (bezoars)	Hernia	Fecal impaction
Stricture	Intussusception	Ulcerative colitis
Superior mesenteric artery syndrome	Lymphoma	Volvulus
	Stricture	Diverticulitis (stricture, abscess)
		Intussusception
		Pseudo-obstruction

DIFFERENTIATING FEATURES BETWEEN ILEUS AND BOWEL OBSTRUCTION ARE OUTLINED BELOW

Table 86-2 Key Features of Ileus and Mechanical Bowel Obstruction

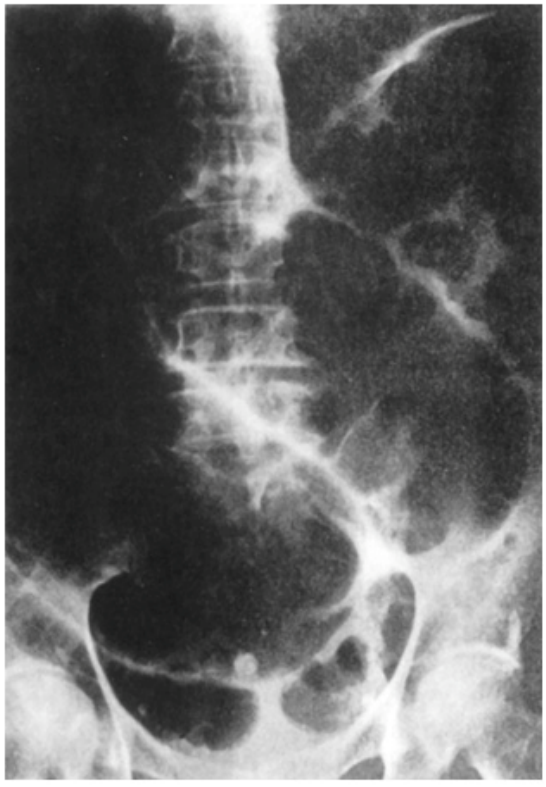
	Ileus	Bowel Obstruction
Pain	Mild to moderate	Moderate to severe
Location	Diffuse	May localize
Physical examination	Mild distention, ± tenderness, decreased bowel sounds	Mild distention, tenderness, high-pitched bowel sounds
Laboratory	Possible dehydration	Leukocytosis
Imaging	May be normal	Abnormal
Treatment	Observation, hydration, ± nasogastric tube	Nasogastric tube, surgery

SMALL BOWEL OBSTRUCTION:

- The most common cause of SBO is ADHESIONS AFTER ABDOMINAL SURGERY
- Second most common cause of SBO is incarceration of a groin hernia (inguinal or femoral)
- Finally, a defect in the mesentery itself may cause SBO → marathon runners have been noted to have SBO due to this
- BARIATRIC SURGERY → can be complicated BY INTERNAL HERNIAS after Roux-en-Y gastric bypass
- Other causes are much less common (IBD/infectious processes, gallstone ileus {with pneumobilia}, radiation enteritis, blunt abdominal trauma with duodenal haematoma {often seen in kids}, capsule retention post capsule endoscopy

LARGE BOWEL OBSTRUCTION:

- Neoplasms are by far the most common cause of LBO and colonic obstruction is ALMOST NEVER CAUSED BY HERNIA OR SURGICAL ADHESIONS → hence colonic obstruction should cause evaluation of a neoplasm
- Diverticulitis may create significant mesenteric oedema and secondary obstruction
    - Stricture formation may occur with chronic inflammation and scarring
- Faecal impaction is common in the elderly and presents with symptoms of colonic obstruction
- The next most common cause of LBO after cancer and diverticulitis is SIGMOID VOLVULUS → elderly, bedridden, those on anticholinergic meds are most at risk
    - Radiographic appearance usually classic (see below)



Sigmoid volvulus → note large bowel distension and central stripe, giving "coffee bean appearance"

PATHOPHYSIOLOGY:

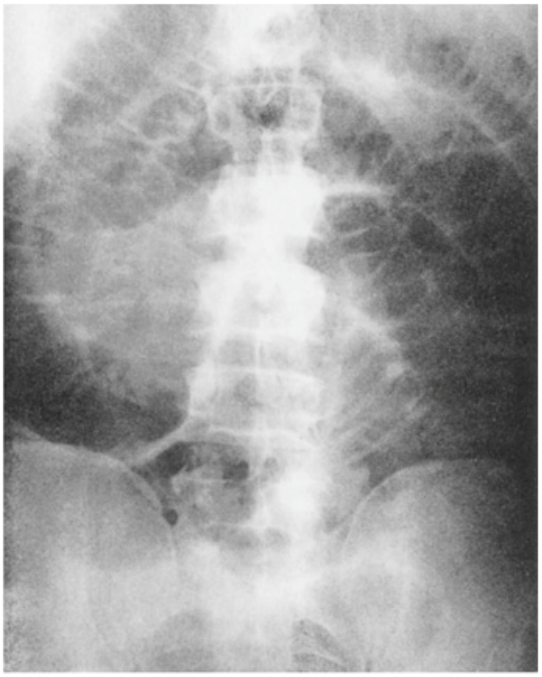
- Combination of decreased absorption, vomiting, and reduced intake leads to volume depletion with haemoconcentration, electrolyte imbalance and ultimately → renal failure and shock
- Bowel distention often accompanies mechanical obstruction → when intraluminal pressure exceeds capillary and venous pressure in the bowel wall, the bowel becomes ischaemic and septicaemia/bowel necrosis ensues → shock rapidly follows and mortality approaches 70% if obstruction is allowed to progress this far → occurs more rapidly in CLOSED LOOP OBSTRUCTION (incarcerated hernia)

CLINICAL FEATURES:

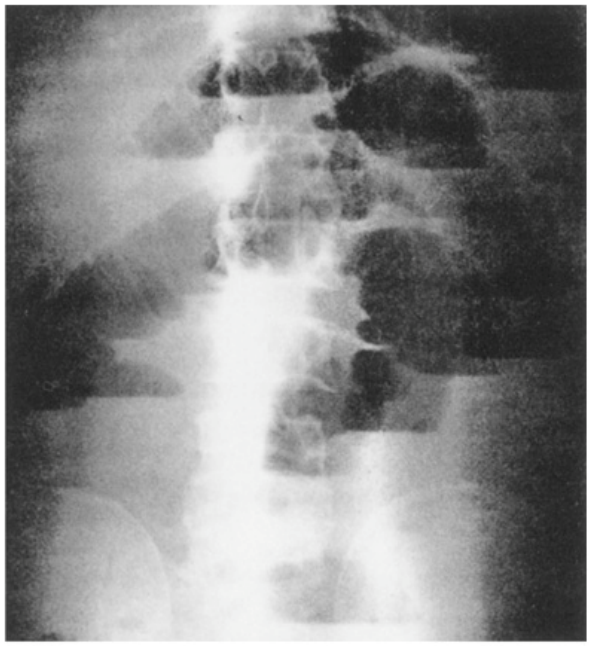
- The site and nature of the obstruction and the pre-existing condition of the patient will determine the clinical presentation
- Almost all have ABDOMINAL PAIN → generally crampy and intermittent
- Proximal obstruction usually causeds VOMITING → usually bilious in proximal obstruction but FECULENT in distal SBO or LBO
- Pain of LBO usually hypogastric
- CONSTIPATION → in partial BO, often associated with regular passage of stool and flatus
- Physical findings vary depending on site, duration and aetiology of pathologic process → abdominal distention usually present.
    - Abdominal tenderness may be minimal but can be severe, can be localised or diffuse
        - Peritonitis causes severe pain
    - Tympanic to percussion
    - High-pitched bowel sounds
- Careful examination for evidence of malignancy, also look for previous surgery
- PR exam mandatory → absence of stool or air in the rectal vault supports obstruction, but its presence does not eliminate a more proximal obstruction

LABORATORY AND RADIOGRAPHIC FINDINGS:

- FBC → nonspecific, but if marked leukocytosis (WCC>20), then think bowel gangrene, intraabdominal abscess or peritonitis. If extreme leukocytosis (WCC> 40) → suspect mesenteric vascular occlusion
- EUC for evidence of electrolyte anomaly or dehydration
- ERECT AND SUPINE AXR and erect CXR (see below) → if clinical suspicion for obstruction is strong and plain films nondiagnostic, then obtain CT scan



Supine film showing distended loops of small bowel



Erect film showing multiple air-fluid levels and "stepladder" appearance

TREATMENT:

- If true mechanical obstruction exists, surgical intervention is required → use NG in presence of severe distention and or vomiting
- Vigorous IV fluid replacement is needed because of loss of absorptive capacity, decreased oral intake and vomiting
- Monitor adequacy of fluid resuscitation by response of BP, HR and urine output
- Close-loop obstruction, bowel necrosis/ischaemia or caecal/sigmoid volvuluss are surgical emergencies → administer pre-op broad spectrum antibiotics