

Bowel Obstruction

- The most common causes of small intestinal obstruction are adhesions (60%), obstructed hernia (20%) and malignancy (primary and secondary – 5–8%).
- In the large bowel, colorectal adenocarcinoma predominates (> 70%), followed by stricturing diverticular disease (10%) and sigmoid volvulus (5%).
- The aetiology of large and small bowel obstruction can be systematically classified as intraluminal, intramural and extramural.
- The clinical presentation of bowel obstruction reflects the anatomical location of the lesion. The predominating features from proximal to distal are as follows.

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- *Proximal jejunal obstruction* – very short history of anorexia, vomiting, relatively severe upper abdominal pain and absent/minimal abdominal distension with limited, if any, change in bowel habit.
- *Distal small bowel obstruction* – short history of colicky midgut (peri-umbilical pain, distension, vomiting and recent absolute constipation).
- *Colonic obstruction* presents more insidiously with poorly defined hindgut abdominal pain/discomfort, weight loss, pronounced abdominal distension, history of altered bowel habit tending to constipation with little or no vomiting.

- Initially the bowel proximal to obstruction contracts vigorously in an attempt to overcome the mechanical impedance.
 - This why exaggerated bowel sound at the begining
- However, eventually peristalsis subsides and paralytic ileus ensues due to electrolyte imbalance and gross distension proximal to the obstruction.
- Patients with obstruction frequently present with profound dehydration due to a combination of vomiting, enforced fasting and 'third space' losses into the wall of the thickened intestine and peritoneal transudate.

- If the situation continues without decompression and resolution, there is progressive bacterial translocation into the portal circulation and the patient becomes increasingly toxic.
- Eventually bowel viability becomes compromised and may perforate.
- Features that indicate imminent perforation, strangulation or established peritonitis from perforation are: pyrexia, tachycardia, dehydration, hypotension, leucocytosis, peritonism on abdominal palpation and completely absent bowel sounds.

- Full clinical history and examination is essential, along with immediate initiation of intravenous fluid and electrolyte therapy.
- Digital rectal examination may reveal rectal or extrinsic malignancy, empty rectum or constipation.
- Hernial orifices must be carefully inspected and any previous surgical abdominal scars noted.



- Right iliac fossa tenderness along with radiological evidence of gross caecal distension in the presence of distal colonic obstruction is a critical sign as it indicates imminent caecal perforation, which is a frequent complication of distal colonic obstruction.
- The reason that the caecum perforates even with obstruction due to sigmoid cancer is because the caecum is anatomically the largest diameter segment in the gut.
- Thus tension is greatest in the caecal wall, despite equalized intraluminal pressure along the colon.



- Closed loop obstruction in either small or large bowel is more likely to strangulate and perforate.
- Closed loop obstruction can occur in small bowel due to adhesions or malignant involvement of two parts of the small bowel.
- If the ileocaecal valve remains competent in colonic obstruction, this acts as one end of a closed loop and the risk of perforation is high, typically at the caecum.

Paralytic ileus

- The term refers to lack of propulsive contractions of both jejunum and ileum, although the ileus can be localized in some instances.
- It is common as a secondary feature of peritonitis due to any cause.
- It also may occur
 - (1) after any surgical procedure due to handling of the bowel;
 - (2) due to electrolyte abnormalities such as hypokalaemia, hyponatraemia, uraemia, diabetic ketoacidosis or;
 - (3) secondary to drugs such as tricyclic antidepressant; lithium therapy, excessive opiate use.
- Management is conservative with bowel rest, nasogastric aspiration and fluid and electrolyte support.
- Treatment is otherwise focused on the underlying cause.

- Operative mortality in patients with pseudo-obstruction is > 15% and so surgery should be avoided wherever possible.
- Blood electrolyte estimation is essential, along with further imaging to ensure that mechanical obstruction is not present.
- Management is conservative.
- Colonoscopic deflation may be required in cases where caecal distension causes concern about impending caecal perforation.
- Intravenous erythromycin can be effective in non-resolving cases and has been shown to stimulate motility by binding to colonic motilin receptors.
- Intravenous neostigmine has been shown to be effective when other measures fail to resolve the pseudo-obstruction.

Intestinal obstruction

SBO

- The most common cause is adhesions from previous surgery; others include hernias, cancer, intussusception, and volvulus.
- It usually presents as sharp, crampy periumbilical pain with intervening pain-free periods; associated symptoms include nausea and vomiting.
- Examination is marked by abdominal distention, high-pitched or tinkling bowel sounds, and a variable degree of abdominal tenderness.
- Plain abdominal films reveal dilated loops of small bowel, air-fluid levels, and paucity of gas in the colon.
- Proximal SBO, however, may not be associated with dilated bowel loops on plain films and often requires a contrast study for diagnosis.

Large-bowel obstruction

- It may be caused by cancer, diverticulitis, volvulus, or impaction.
- Presenting symptoms include constipation, vomiting, abdominal distention, and varying degrees of abdominal pain.
- Examination may reveal abdominal distention or a mass on rectal examination.
- Plain abdominal films may reveal colonic distention.
- The risk of perforation increases as the cecal diameter exceeds 12 cm.