INTESTINAL OBSTRUCTION

- **Definition:**

  Intestinal obstruction occurs when there is interference with the normal caudal progression of intestinal contents.

- **Incidence:**

  A common surgical emergency. About 20% of surgical admission for acute abdominal condition are for intestinal obstruction.

- Aetiology:

1. Mechanical obstruction of the lumen (Dynamic)
2. Inadequate propulsive motility (adynamic)

1. Mechanical obstruction

: There is increasing peristalsis working against an obstructing agent, which maybe:

a) Intraluminal

b) Intramural

c) Extra luminal

a) Luminal causes

i) Meconium

ii) Intussusception

iii) Impactions - faecal, worms

iv) Gallstones

v) Imperforate anus

vi) Bezoar.

b) Intramural

- Atresia, stenosis
- Diverticulitis
- Strictures (e.g. radiation)
- Tumors or Neoplasia.

c) Lesions extrinsic to bowel

- Adhesive bands
- Hernias
- Extrinsic Masses
  - eg: Annular pancrease
  - Anomalous vessels
  - Neoplasms
- Volvulus

ii) Inadequate propulsive motility (Adynamic)

A Neuromuscular defects
Megacolon- Hirschsprings dx
B Paralytic ileus which may be due to

- Abdominal causes such as
  - Intestinal distension
  - peritonitis
  - Retroperitoneal lesions or

- Systemic causes such as
  - electrolyte imbalances
  - toxemias septicaemia

c) Vascular occlusion

- Arterial - thrombus
- Venous

PATHOLOGY OF INTESTINAL OBSTRUCTION OR PATHOPHYSIOLOGY

A) Fluid and electrolyte losses due to:

1) Defective absorption of gasses and fluid

2) Sequestration or secretion into lumen of fluids which is usually increased due to bowel wall permeability.

3) Vomiting.

b) strangulation

- Occurs when occlusion of blood supply to a segment of bowel in addition to lumen obstruction.
- Interference with the mesentric blood supply is the most serious complication of intestinal obstruction and frequently occurs 2° to adhesive band obstruction, hernia and volvulus.
- Strangulated bowel results in loss of blood and plasma-like fluid, and the gangrenous bowel leaks toxic materials through the bowel into the peritoneal cavity.
- Note that there occurs trans migration of bacteria and toxins since the wall of the intestines becomes devitalised. This may be absorbed into circulation thence septicaemias.

c) closed – loop phenomena in intestinal obstruction

- Is present in many causes of intestinal strangulation and is typically illustrated by a distally occluded colon due to a neoplasm, while proximally, ileo-caecal valve prevents regurgitation of the large intestines contents into the ileum.
- Therefore that part of colon proximal to the neoplasm is closed at both ends and as a result of anti-peristalsis the pressure within the caecum becomes so high as to compress the blood vessels within its walls. If obstruction is unrelieved, ulceration occurs thence perforation of caecum may occur.

Clinical features

- **4 cardinal symptoms & signs**

1. **PAIN** - colicky or crampy felt synchronously with hyperpenstalsis.

2. **VOMITTING: early in proximal intestinal obstruction and late in large bowel obstruction.**

3. **DISTENTION** - fluid, gases, faecal loading. visible peristalsis

4. **CONSTIPATION** - relative
   absolute - no faeces
   - no flatus

Others:-

- Dehydration,Hypokalaemia,Pyrexia,abdominal tenderness.

  Strangulation cases get persistent pains. Symptoms are of sudden onset generalised tenderness and rigidity. Also if not generalised you get localised rebound tenderness.

- Hernia- irreducible, tense tender with absent expansile cough impulse.

Laboratory / Investigations

- X-rays - Erect
  lateral decubitus.
- a) Gas shadows – multiple and
  jejunum - concertina effect
  ileum - characterless
  Large intestines - haustral folds.
- b) Fluid levels
  (multiple) if 3 or more & constant in adults

Investigations continued

- **Ba enema** – in colonic lesions and also may be therapeutic for reduction of non strangulated intrassusception in children.
  Has its dangers: *may cause perforation in inflammatory conditions such as diverticulitis or appendicitis*.
- **IVU** look of ureteric calculi which may produce paralytic ileus
- **Haematocrit**
- **U/E** Bun – due to dehydration
  K^+, Na^+
- **Urinalysis** – pH
  sg
  Proteinuria

Management

- Principles
  a) Fluid and electrolyte therapy
  b) Decompression of bowel
     Rest the gut by nil per oral
     NG tube
     Flatus tube
     Enema
  c) Surgical procedures may be divided into five categories:-

Surgical procedures:

1. Procedures not requiring opening of bowel – eg. lysis of adhesions, manipulation /reduction of intussusception, reduction of incarcerated hernia.
2. Enterotomy – removal of gallstones etc.
3. Resection with primary anastomosis.
4. Short-circuiting anastomosis around an obstruction eg: ileotransverse anastomosis as in ca. Caecum or ascending colon
5. Formation of a cutaneous stoma proximal to the obstruction eg. Ceaecostomy, transverse colostomy.