# INTESTINAL OBSTRUCTION

# OBJECTIVES

- Definition
- Classification
- Pathophysiology
- Clinical presentation
- Investigations
- Management

# DEFINITION

- When the intestinal content fails to move distally it is called intestinal obstruction

# Defination conti…..

- *Complete intestinal obstruction indicates total blockage of the intestinal* lumen, whereas *incomplete denotes only a partial blockage.*
- Obstruction may be *acute (hours) or chronic (weeks), simple (mechanical),* i.e. blood supply is not compromised, or *strangulated, i.e. blood* supply is compromised.
- A *closed loop obstruction indicates that both* the inlet and outlet of a bowel loop is closed off.
- A *volvulus is an* abnormal twisting of a segment of the bowel causing intestinal obstruction and possible ischaemia and gangrene of the twisted segment.

- Small bowel obstruction is often rapid in onset and commonly due to adhesions or hernia.
- Large bowel obstruction may be gradual or intermittent in onset, is often due to carcinoma or strictures and never due to adhesions alone

# CLASSIFICATIONS

- 1. According to the etiopathology
- Dynamic / mechanical intestinal obstruction
- Adynamic /functional intestinal obstruction

## A. In the lumen-intraluminal

i. Feacal impaction
ii. Ascaris lumbricoids
iii. Foreign body
iv. Beazer
v. Gall stones
vi. Meconium ileus

## B. In the wall-mural

i. Stricture eg. TB
ii. Crohns disease
iii. Carcinoma
iv. Atresia
v. Adhesion

## C. Outside the wall-extra mural

i. Volvulus
ii. Intussusception
iii. Congenital band
iv. Obstructed hernia
v. Meckel’s diverticulum with band

# Adynamic

- Post operative period
- Electrolyte imbabance
- uraemia

# CLASSIFICATION

## 2. Congenital and Aquired

A. Congenital (duodenal atresia ,intestinal atresia, adhesions, bands and adhesions)

B. Aquired (hernia, round worms, intussusception, tb,malignancy, post operative ,gallstones)

Classi……

**3. Depending on the type of obstruction(severity)**

A. Acute Obstruction – signs and symptoms appear early eg obstructed hernia, bands, and usually affect small bowel

B. Chronic obstruction.-mainly large bowel eg colon Cancer

C. Acute on chronic

D. Closed loop obstruction

Classif……

**4. Anatomical Classification**

**Proximal small bowel (duodenum and jejunum)**

**Causes ;**

**congenital, lipoma,malignancy ,bands and adhesions**

**c/f –severe vomiting, colicky pain dehydration, no or less dehydration**

**Valvulae conniventes on plain xray**

# Continua…….

- Distal small bowel
- (ileum)
- Causes (malignancy gallstones ,hernias, roundworm )
- c/f –vomiting, dehydration, central abdominal pain , central distention
- Charaterless on xray and central fluid level

# Conti……

- Large bowel
- (anywhere in the large bowel)
- Causes (malignancy,sigmoid volvulus, bands,tb stricture etc)
- C/F- constipation, distention early, late vomiting less pain
- Dilatation and haustrations on Xray .

# Pathophysiology

- Bowel distal to obstruction collapses.
- Bowel proximal to obstruction distends and becomes hyperactive. Distension is due to swallowed air and accumulating intestinal secretions.

# Conti……

- The bowel wall becomes oedematous. Fluid and electrolytes accumulate in the wall and lumen (third space loss).
- Bacteria proliferate in the obstructed bowel. As the bowel distends, the intramural vessels become stretched and the blood supply is compromised, leading to ischaemia, necrosis and perforation.

# Conti……

1. Above the obstruction

Peristalsis increases. Intestines dilates. Reduction in peristaltic strength. Flaccidity and paralysis

2. Below the obstruction

Normal peristalsis and absorption. Until it becomes empty. It contracts and becomes immobile

# PATHOPHYSIOLOGY

- Distention
- Proximal damming
- Venous compression
- Congestion and edema of the bowel-bowel will appear purple- lose of fluid into third space-dehydration-kidney failure
- Progressive arterial compression-black discouration
- Gangrene
- Proliferation of  bacteria
- Translocation of bacteria and toxins
- Peritonitis
- Septic shock

# Clinical features

History:

- **Abdominal pain**
  - Central is small bowel
  - Peripheral is large bowl
  - Colicky in nature
  - Intermittent (5-10 minutes)
- **Vomiting**
  - Reverse peristalsis-stomach, bile, feculent last
  - Frequent vomiting is jejunal obstruction
  - Blood –gangrene and hemorrhage
  -

- Distention
  - Central ileal
  - Peripheral is large bowel
  - Localized-sigmoid volvulus

- **Constipation**
  - Obstipation –is constipation to both faeces and flatus.

# SIGNS

- **General signs of dehydration:**

- Dry skin, sunken eyes, low urine output, feeble pulse

- **Abdominal findings:**

- Distention
- Visible peristalsis
- Tympanic on percussion
- Auscultation –loud noisy intestinal sounds- borborygmi
- Hernia orifices are to be examined.

# Other signs

- ?Rebound tenderness-peritonitis
- ?Absent bowel sounds-ileus
- ?Continuous pain-strangulation-Other-tachycardia, tenderness, fever, acidosis

- Septic shock-fever, hypothermia, renal failure, respiratory failure.

- DIGITAL RECTAL EXAM:

# Investigation

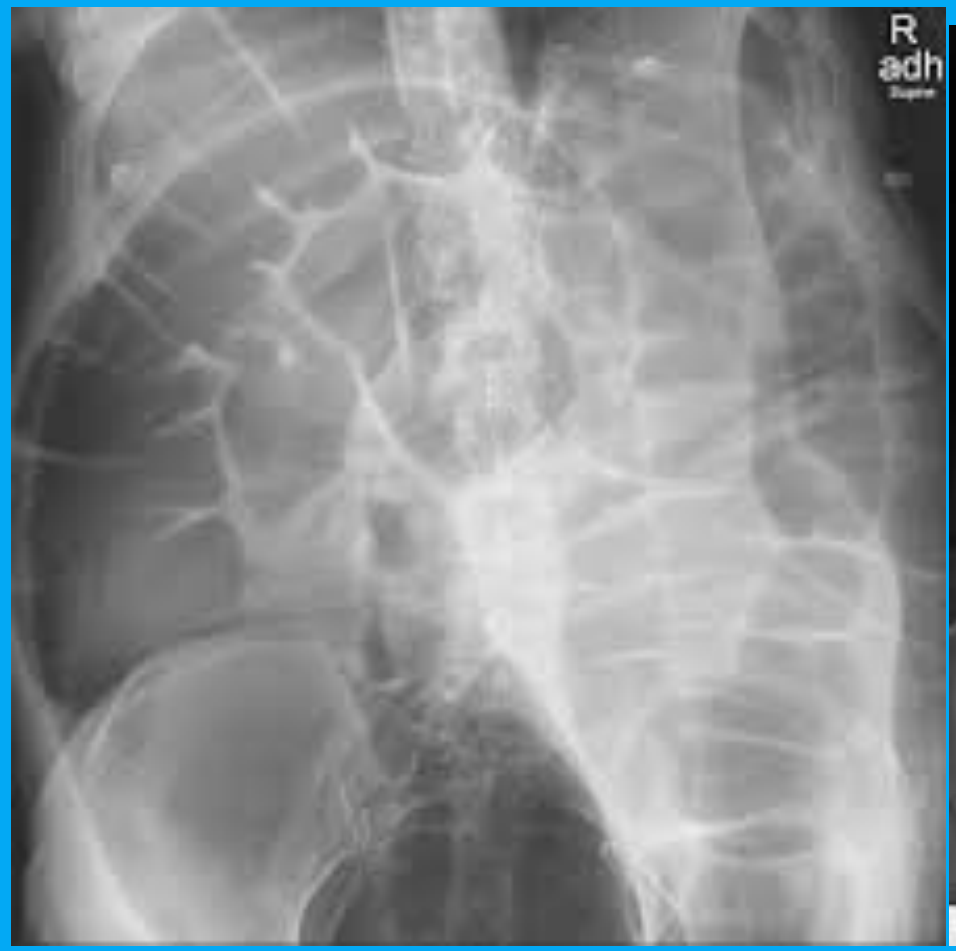
Diagnostic:

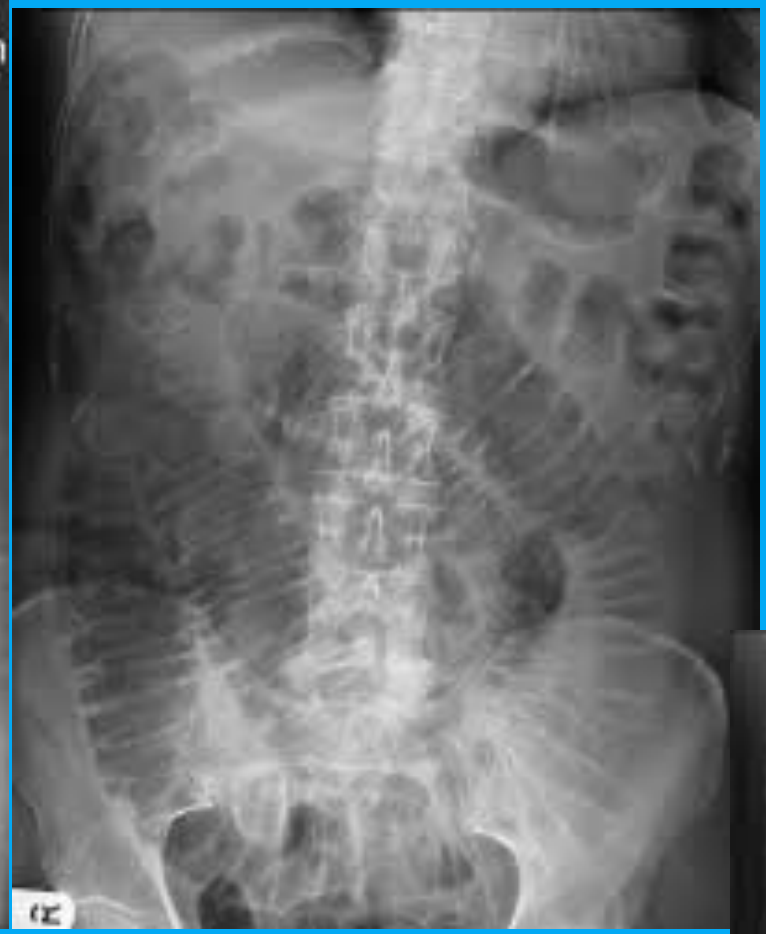
Plain X-Ray

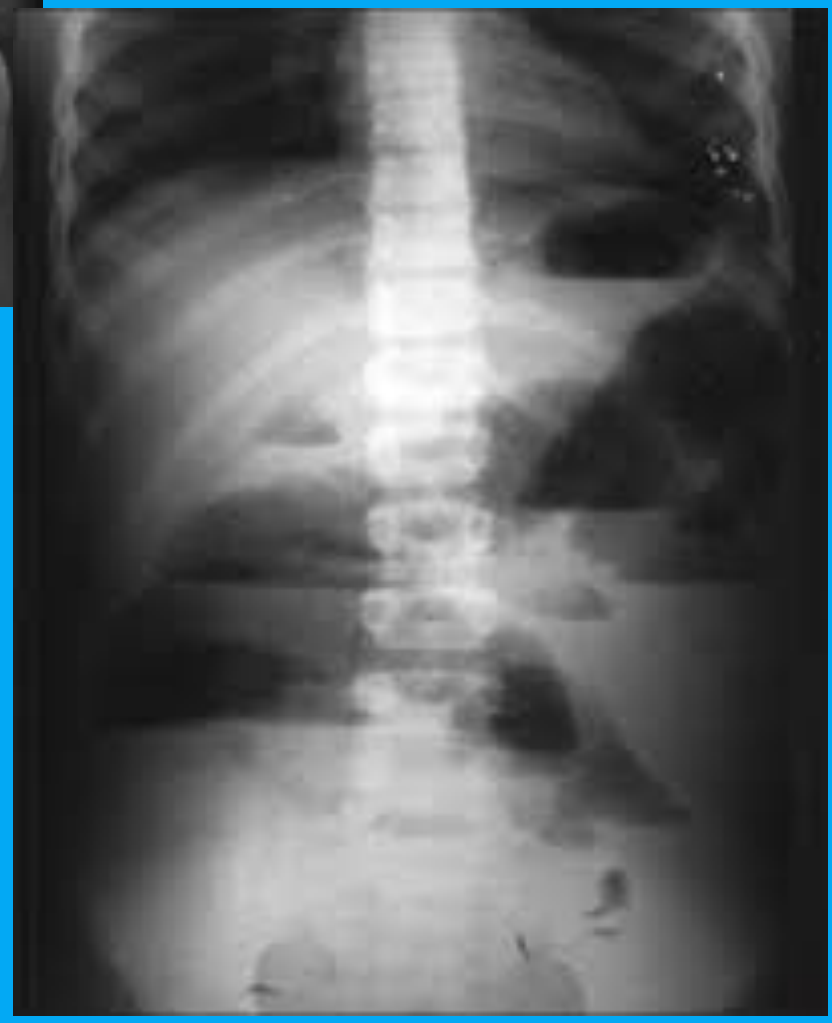
1. Erect abdominal
2. Supine abdominal
3. Chest x-ray

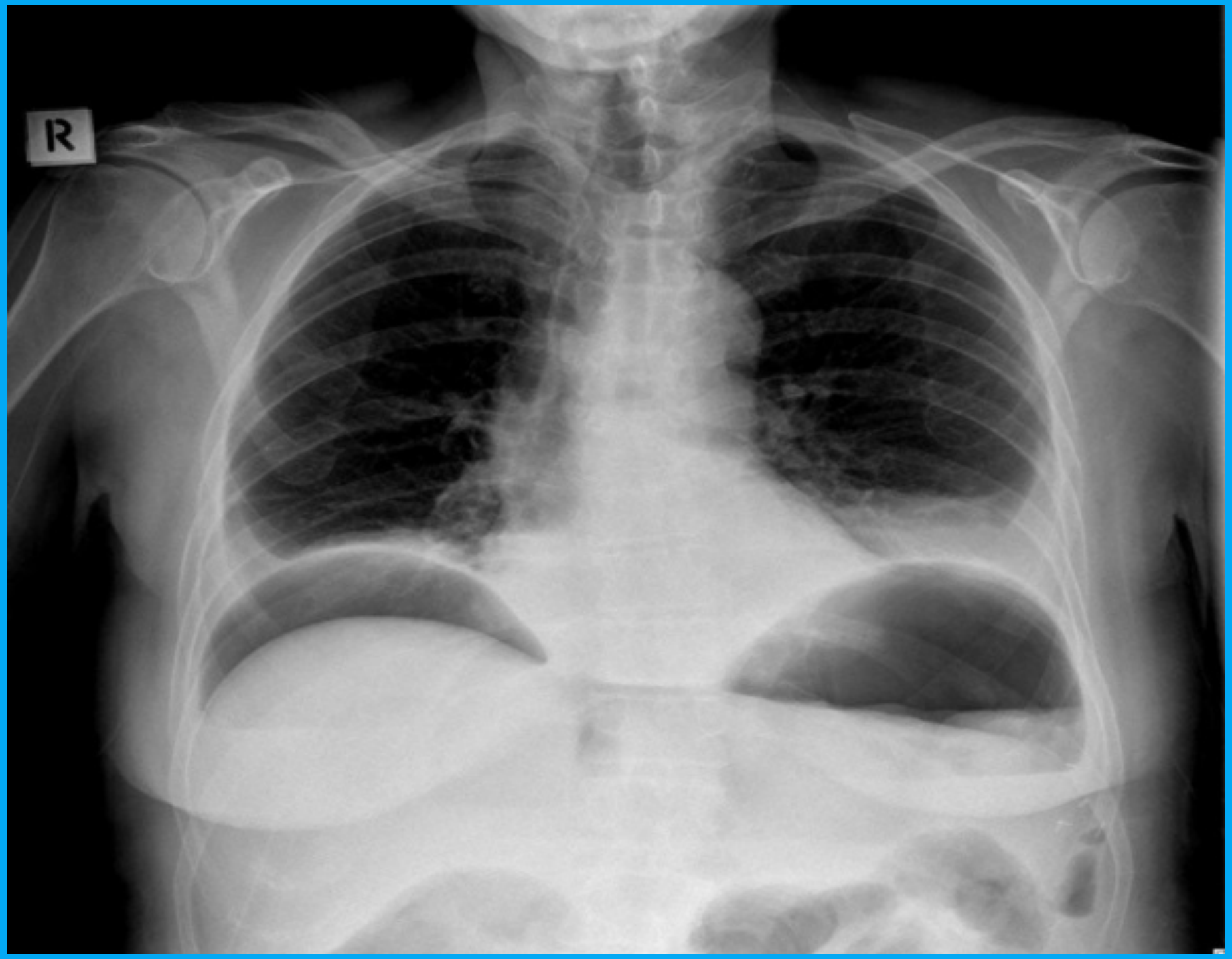
Supportive

1. FBC/DC
2. Electrolytes
3. X-MATCH


R
adh






R

# AXR Findings

| | SBO | LBO |
|---|---|---|
| **Diameter** | **≥3** | **≥6**cm (caecum **≥9**) |
| **Location** | Central | Peripheral |
| **Markings** | Valvulae coniventes<br>- completely across | Haustra<br>- partially across |
| **LB Gas** | Absent | Present<br>- not in rectum |
| **No. of loops** | Many | Few |
| **Fluid levels** | Many, short | Few, long |

# MANAGEMENT

## INITIAL RESUSTATION:

# ABCDE

- Resuscitation
- ABC
- N.P.O
- Tubes NGT – decompress stomach and prevent aspiration during intubation
- Catheter
- IVF
- Antibiotics

# FURTHER MANAGEMENT AFTER INITIAL

- **Aspiration** - NGT----will prevent vomiting—decompression---prevent aspiration.
- **Bowel care**– no purgatives may cause perforation
- **Charts:** Temp---Respiration—Pulse—BP—input/output
- **Drags-** Cover gram negatives, gram positives and anaerobes
- **Exploratory Laparotomy**

# PRINCIPLES OF EXP LAPAROTOMY

- Adhesions- adhesions lysis
- Bands- Release
- Gall stone- Remove
- Volvulus-Untwist and resect
- Obstructed hernia- Reduce
- Gangrene- Resect
- Stricture-Resect and stricturoplasty
- Advanced malignancy-Bypass

# CONCLUSION

- The secret to understanding the presentation, evolution and management of this common problem as well as contributing future management options comes down to the understanding and the application of the pathophysiology of intestinal obstruction.