

The *ABCs* of

Acute Abdomen

Definition

Abdominal symptoms & signs of such severity or concern that disorders require urgent surgery or decision



Pathophysiology

1. Visceral innervation:

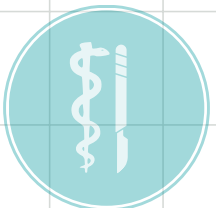
- a. Innervation of the internal organs
- b. Senses distension of hollow viscus (stomach, intestine)
- c. Character: **Vague & poorly localised**
- d. Location:
 - i. Epigastric
 - ii. Periumbilical
 - iii. Hypogastric

2. Parietal innervation:

- a. Segmental nerves that innervate the peritoneum
- b. Secondary to inflammation/internal bleeding
- c. Character: Sharp & more localised

3. Referred pain:

- a. Secondary to innervation of different sites by the same nerve root



Surgical Causes

1. Minutes Counts

- a. Massive haemorrhage
 - i. Trauma
 - ii. Ruptured Aortic Aneurysm
 - iii. Ruptured Ectopic pregnancy
 - iv. Ruptured spleen

2. Hours Counts

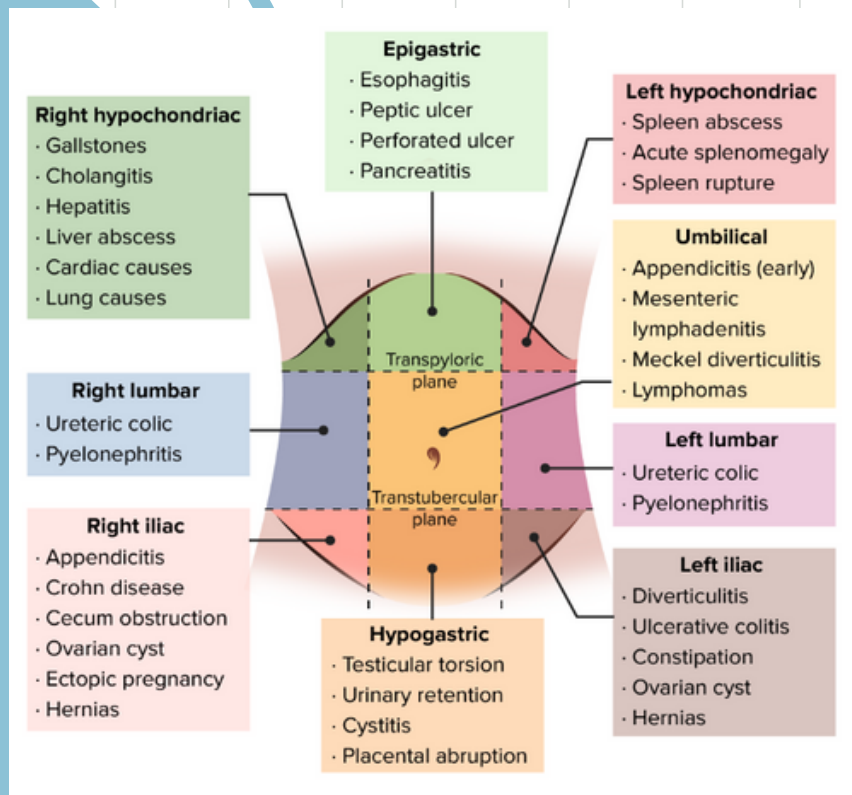
- a. Perforation
 - i. Gastric/duodenal ulcers
 - ii. Diverticulum, Gallbladder
 - iii. Mesenteric embolism/thrombosis

3. 12 Hour Delay

- a. Small bowel obstruction, volvulus
- b. Incarcerated Hernia
- c. Mesenteric Vessel Obstruction



Fig1: Illustrates an incarcerated hernia in a paediatric patient

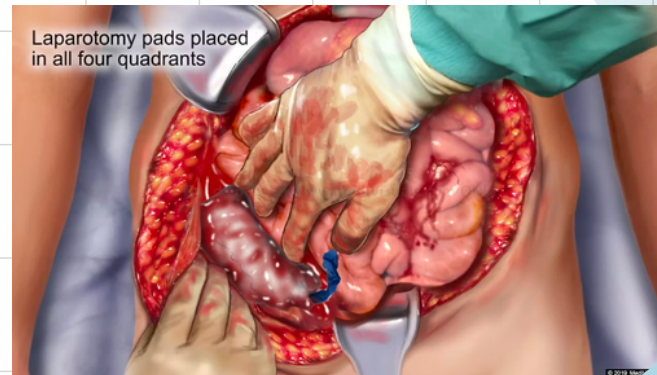
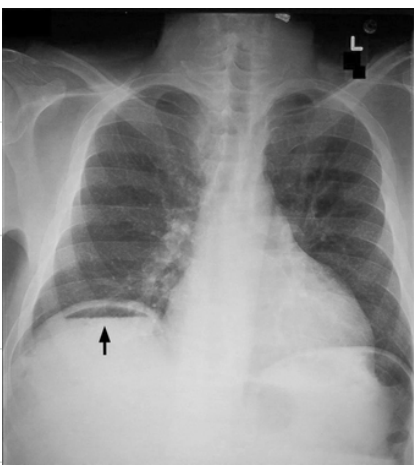


1. **Perforation:** Free air
2. **Bowel obstruction:** Air fluid levels + Dilated loops of bowel
3. **Bowel ischaemia with pneumatosis:** Enhancing intestinal walls & Portal venous gas
4. **Intraabdominal hematoma:** IV contrast to identify source

Investigation

1. General
 - a. FBC, U&E, Amylase, LFTs, CRP, RFTs
2. Imaging
 - a. CXR (1st line test for free abdominal air)/AXR
 - b. Abdominal USG
 - c. CT Scan





Early Management

1. Correction of fluids & electrolytes imbalances
2. Insertion of nasogastric tubes (Ryle's tube)
3. Urethral catheterization
4. Central line
5. Vital support system
6. Antibiotics
 - a. Ampicillin 500mg / 3rd Generation Ceph
 - b. Gentamycin 80mg
 - c. Metronidazole 500mg
7. Analgesia

Post-op Care

1. Pain management
2. Monitoring vitals
3. Wound care
4. Early mobilization
5. Nutrition
6. Bowel management
7. *Pneumoperitoneum*
 - a. Normal small amount of free air, self limiting in 7-10 days
 - b. Massive/unresolved should raise concerns for anastomotic leak / perforation

Surgery

1. Diagnostic laparoscopy
 - a. Most helpful in triaging
 - b. Avoided in significantly dilated bowel
 - c. Some definitive intervention can be performed laparoscopically
2. Exploratory laparotomy
 - a. Typically via midline incision
 - b. Visual & tactile examination of all the abdominal contents
 - c. Approach of choice in cases of gross abdominal contamination



ANSWERS TO CASE SCENARIO

Please refer to SIGMUM Insta for questions!

1. **Acute appendicitis, Gastroenteritis, Non-specific abdominal pain, Ectopic gestation, Salpingitis**
2. **WCC, BHCG, Pelvic ultrasound**

