

# ANATOMY & PHYSIOLOGY



- The appendix sits at the junction of the small intestine and large intestine.
- It's a thin tube about four inches long. Normally, the appendix sits in the lower right abdomen.

## INTRODUCTION



Appendicitis is an inflammation of the appendix, a finger-shaped pouch that projects from colon on the lower right side of abdomen. Appendicitis causes pain in lower right abdomen. However, in most people, pain begins around the navel and then moves. As inflammation worsens, appendicitis pain typically increases and eventually becomes severe. Although anyone can develop appendicitis, most often it occurs in people between the ages of 10 and 30..



# DEFINITION

- Appendicitis is an inflammation of the vermiform appendix that develops most commonly in adolescents and young adults.

( Joyce M Black)

- Appendicitis is an acute inflammation of the appendix.

( B.T Basuvanthapa)

# ETIOLOGY

## ➤ OBSTRUCTIVE CAUSES

- Fecalith ( a fecal calculus or stone ) that occlude lumen of the appendix.
- Kinking of the appendix ( Twisting or curling)
- Swelling of bowel wall

## ➤ NONOBSTRUCTIVE CAUSES

- Haematogenous spread of infection
- Vascular occlusion
- Trauma
- Diet lacking fibres

# PATHOPHYSIOLOGY



- DUE TO ETIOLOGICAL FACTORS



OBSTRUCTION OF APPENDIX  
( DUE TO FECALITH, TUMOR)



INCREASED INTRALUMINAL PRESSURE



ISCHEMIC INJURY

# CLINICAL FEATURES

## SYMPTOMS

- Pain : severe colicky type initially felt in the umbilical region & it is due to the distension of appendix.
- Vomiting
- Anorexia
- Fever ( 100° F )
- Haematuria ( uncommon )
- Constipation

## ROVSING'S SIGN

- The Rovsing's sign is positive when pressure over the patient's left lower quadrant causes pain in the right lower quadrant.



## PSOA'S SIGN

- Psoas sign is right lower-quadrant pain that is produced with the patient extending the hip due to inflammation of the peritoneum. Straightening out the leg causes the pain because it stretches the muscles.



## OBTURATOR'S SIGN



- Pain on passive internal rotation of the flexed thigh. Examiner moves lower leg laterally while applying resistance to the lateral side of the knee resulting in internal rotation of the femur.



## BLOOMBERG'S SIGN



- BLOOMBERG'S SIGN Also referred as rebound tenderness .
- Deep palpation of the viscera over the suspected inflamed appendix followed by sudden release of the pressure causes the severe pain on the site.
- This indicates positive Blumberg's sign & peritonitis.



## CLINICAL STAGES

- The stages of appendicitis can be divided into early, suppurative, gangrenous.
- **Early stage appendicitis**
- In the early stage of appendicitis, obstruction of the appendiceal lumen leads to
  - Mucosal edema,
  - mucosal ulceration,
  - bacterial diapedesis,
  - appendiceal distention due to accumulated fluid, and increasing intraluminal pressure.



- The visceral afferent nerve fibers are stimulated, and the patient perceives mild visceral periumbilical or epigastric pain, which usually lasts four to six hours

**Gangrenous appendicitis** —

Intramural venous and arterial thrombosis , resulting in gangrenous appendicitis.



- **Suppurative appendicitis**
- Increasing intraluminal pressures eventually exceed capillary perfusion pressure.
- Transmural spread of bacteria causes acute suppurative appendicitis.
- When the inflamed serosa of the appendix comes in contact with the parietal peritoneum, patients typically experience the classic shift of pain from the periumbilicus to the right lower abdominal quadrant (RLQ), which is continuous and more severe than the early visceral pain.



## DIAGNOSTIC MEASURES

- History collection
- Physical examination
- White cell count (WCC) – usually mildly elevated, around 11-14,000
- C reactive protein (CRP) – elevated .
- Urinalysis
- Complete blood count



## Medical Management

Goal of medical management includes

- To treat infections
- To prevent further complications
- Medication therapy includes
  - ✓ Antibiotic therapy examples cephalosporin
  - ✓ Anti inflammatory drugs. Metrogyl
  - ✓ Analgesics
  - ✓ Fluid therapy.

## SURGICAL MANAGEMENT

- The surgical procedure for the removal of the appendix is called an **appendectomy**.
- **Appendectomy** can be performed through open or laparoscopic surgery.
- Laparoscopic appendectomy has several advantages over open appendectomy as an intervention for acute appendicitis.

## Pre- operative Preparation

- Once diagnosis is suspected, the Patient is Admitted to hospital
- IV Fluids – isotonic Saline or Ringer lactate is given.
- Ryle's tube is not necessary in simple appendicitis.
- Second generation Cephalosporin along with metronidazole is given.
- Informed consent is taken.

# Appendicectomy

- Appendicectomy is a surgical procedure to remove the appendix from the abdomen. It can be performed either with a small incision on the abdomen or laparoscopically (key hole surgery).
- **Indications for open appendicectomy**
- Dense adhesions due to inflammation or prior surgical procedures.
- Perforated or gangrenous appendicitis.
- Generalized peritonitis.

## Lap . Appendicectomy

- Become popular nowadays
- Less post operative pain
- Speedy recovery
- If intraoperative complications that cannot be handled with laparoscopy arise during laparoscopic appendectomy, conversion to an open appendectomy

