Acute abdomen

- This is an acute surgical condition caused mainly by a variety of acute surgical pathology.
- Abdominal pain arising from alimentary tract is of two types:
  1. **Visceral pain:** Which is related directly to the alimentary canal and its origin either from hind gut or foregut and midgut giving colicky pain.
  2. **Peritoneal Pain:** It is somatic type due to peritoneal wall irritation. It's more severe and more localized. It's due to irritation by underlying inflamed organ e.g. appendix or infected free peritoneal fluids e.g. pus.

### Surgical anatomy of acute abdomen

The abdomen is divided into different anatomical compartments.

1. **Upper abdomen** → Right hypochondriam, Epigastruim and left hypochondruim.
2. **Mid abdomen** → Right lumbar region, umbilical region and left lumbar region.
3. **Lower abdomen** → Right iliac fossa, suprapubic region and left iliac fossa.
4. **Inguinal regions** → Right and left inguinal region.

### Common causes of acute surgical abdomen

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### Acute Appendicitis

#### Epidemiology
- It is the most common acute surgical condition in the abdomen.
- It affects both sexes equally.
- Age incidence: at any age. Maximum between 20-30 years.

#### Types
- **Simple non obstructive:**
  - Less common 30%, less serious, catharal or suppurative.
- **Obstructive appendicitis:**
  - It is due to obstruction of the lumen by fecolith. Symptoms are more severe, and complications are more common.

#### Clinical picture
- **1. Pain** → First generalized, periumbilical and then shifted to right iliac fossa.
- **2. Nausea and Anorexia.**
- **3. Vomiting.** Once or more, not repeated.
- **4. Constitutional symptoms:** malaise, headache and fever.

On Examination:
- **1. Localized tenderness at right iliac fossa.**
- **2. Guarding rigidity at right iliac fossa.**
- **3. Rebound tenderness due to peritoneal irritation.**

#### Complications
- **1. Appendicular abscess.**
- **2. Appendicular mass.**
- **3. Peritonitis either localized or generalized.**

#### Diagnosis
- **1. Mainly by clinical examination.**
- **2. Blood picture** → Leucocytosis occurs nearly in 30% of non complicated appendicitis.
- **3. Urine analysis** to exclude urological causes.
- **4. Abdominal US** to exclude other causes of acute abdomen.

#### Treatment
- Immediate appendicectomy in uncomplicated appendicitis.

### Acute cholecystitis

#### Pathology
- Two main types:
  1. **Acute non calculi cholecystitis** → It is catarrhal, suppurative, or gangrenous. No stools.
  2. **Acute calculi cholecystitis** → It is due to stone in the gall bladder impacted at Hartman’s pouch, leading to mucocoele or pyocoele, also perforation could follow.

#### Clinical picture
- **1. Pain:** Sudden sever pain in right hypochondriam and epigastruim, more in middle and old aged female patient, biliary colic.
- **2. Vomiting:** Distention, fever and rigors.

On examination:
- **1. Tenderness, guarding rigidity at right hypochondriam and epigastruim.**
- **2. Mass at right hypochondriam which is distended gall bladder. Tenderness is felt below costal margin.**

#### Diagnosis
- **1. Lab investigations:**
  - a) CBC: leucocytosis.
  - b) Liver function test
  - c) Serum amylase.
- **2. Radiological investigations** → Mainly abdominal US which will reveal gall stones and distended gall bladder.

#### Treatment
- **1. Urgent cholecystectomy usually within the first 48 hours.**
- **2. Conservative treatment.**
  - a) IV fluids
  - b) Sedation
  - c) Antibiotics

When the inflammation subsides and the condition will be chronic cholecystitis usually after 2-4 weeks, cholecystectomy could be done.
## Acute peptic ulcer disease

### Epidemiology
- Peptic ulcers are diseases that affect any part of alimentary tract exposed to peptic digestion.
- It mainly affects the stomach and duodenum due to excessive secretion of HCl by peptic cells.
- Incidence → It is a common disease that affects nearly 10% of all people.

### Pathology
- A. Chronic duodenal ulcer.
- B. Chronic gastric ulcer.
- C. Acute duodenal ulcer.
- D. Acute gastric ulcer.

The excessive gastric acid secretion will lead to ulceration of the mucosal covering and the wall of different sizes and sites.

### Clinical picture
1. Pain → Deep seated burning pain at the epigastrium. It's mainly localized and sometimes radiates to the back. Pain at time of hunger. If relieved by food e.g: milk. And precipitated by spicy and heavy meals.
2. Vomiting → Could occur in gastric ulcer.

**On examination:**

### Diagnosis
1. **Radiology** → Barium meal will reveal the site of the ulcer.
2. **Upper endoscopy** → It is a fibroptic endoscopy visualizing the whole upper gastrointestinal tract from the oesophagus, stomach, duodenum.

### Treatment
- Medical: Mainly diet control and Antacids.
- Surgical: Vagotomy or subtotal gastrectomy.

## Acute intestinal obstruction

### Introduction
Intestinal obstruction is failure of the onward progress of intestinal contents. Mainly due to mechanical occlusion of the lumen, rarely due to failure of the propulsive mechanisms.

### Causes
1. **Intraluminal causes:** as impacted stools, gall stones, parasites.
2. **Luminal causes:** tumors, benign or malignant. Strictures. Volvulus or intussusception.
3. **Extra luminal causes:** By adhesions or mass pressure from outside.
4. **Adynamic** due to paralysis of the intestine.

### Clinical picture
1. Pain: Central abdominal pain, colicky.
2. Vomiting.
3. Constipation.
4. Abdominal distention with is mainly central.

**On examination:**
1. Tenderness.
2. Distention.

### Diagnosis
1. **Radiology** → Plain X-ray: distended loops and empty rectum.
2. **Lab:** → Leucocytosis → haemoconcentration.

### Treatment
- A. Conservative → IV fluids, suction, NPO. antibiotics
- B. Treatment of the cause → By urgent operation as in case of strangulated hernia.

## Gynecological causes of acute abdomen
1. Spasmodic dysmenorrheal.
2. Mid cyclic pain.
3. Ruptured ovarian cyst.

## Urological causes of acute abdomen (Acute renal colic)
1. Stones kidney, ureter.
2. Acute pyelonephritis.
3. Acute renal infection.

**Treatment → Treatment of the cause.**

## Differential Diagnosis of pain in right iliac fossa.
1. Acute appendicitis.
2. Acute mickel’s diverticulitis.
3. Urological cause.
4. Gynecological causes.
5. Tumors in right iliac fossa as cancer caecum.
6. Chronic inflammatory bowel disease as Ulcerative colitis and chron’s disease.

**Treatment → treatment of the cause.**

## Differential diagnosis of pain in rt. hypochondrium
1. Acute cholecystitis.
2. Acute Hepatitis.
3. Acute cholangitis.
4. Acute liver abscess either specific or non specific.

## Differential diagnosis of pain in the epigastrium
1. Acute peptic ulcer.
2. Acute pancreatitis.
3. Acute myocardial infarction.
5. Acute intestinal obstruction.