

Acute abdominal pain

- ◀ Presented by:-
- ◀ Aya Shaltaf
- ◀ Talal Zihlif
- ◀ Feras Atieh
- ◀ Batool Alzubaidi
- ◀ Rama Aljolani
- ◀ Mohammed Alomari

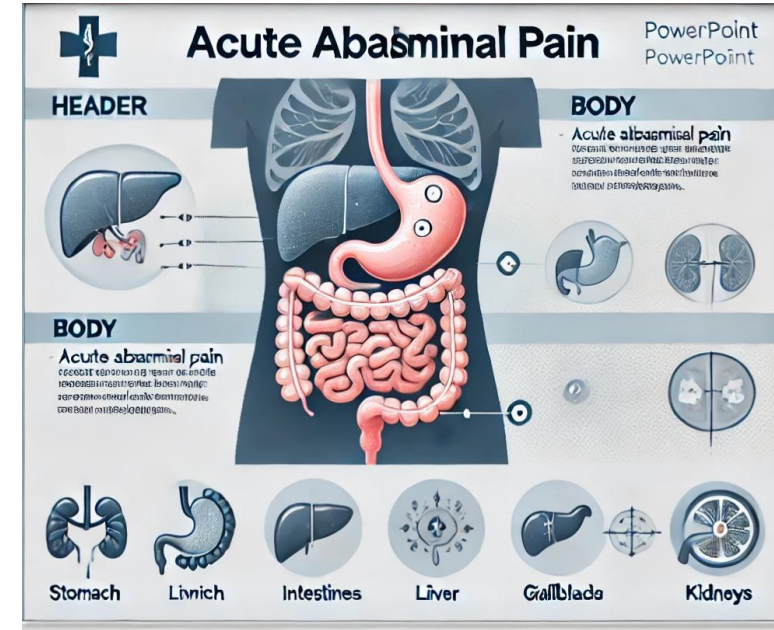


Approach to patient With acute abdominal pain

Presented by:-
Aya Shaltaf

Acute abdominal pain:-

- ◀ Refers to a recent, sudden onset of pain in the abdomen, which may indicate a wide range of underlying conditions, ranging from benign to life-threatening. It is one of the most common reasons for emergency department visits and the most common emergent issue in general surgery , often presents with a vast differential diagnosis including both intra- and extraperitoneal processes.



Three main types of abdominal pain:-

Visceral pain:-

Deep, dull, poorly localized pain and triggered by inflammation; ischemia; and geometric changes such as distention; traction; and pressure.

Parietal pain:-

Sharp, severe pain that is well localized to a distinct abdominal quadrant , occurs due to peritoneal inflammation, chemical peritonitis, or mechanical stimulation.

Referred pain:-

Pain felt in a different location from where the actual problem exists, because organs sharing the same nerve pathway.

ABDOMINAL PAIN

VISCERAL

- * **NERVES** RUNNING THROUGH the WALLS of an ORGAN get **STRETCHED**
- * **NOT WELL LOCALIZED**
- * **DULL ACHE** or **CRAMP**
- * **HOLLOW ORGANS**
 - ↳ **INTERMITTENT COLICKY PAIN**
- * **SOLID ORGANS**
 - ↳ **CONSTANT PAIN**



PARIETAL

(SOMATIC PAIN)

- * **IRRITATION** to the **PARIETAL PERITONEAL WALL**
- * **SHARP**
- * **CAN BE LOCALIZED**

REFERRED PAIN

- * **BRAIN MISTAKENLY IDENTIFIES PAIN** from **DIFFERENT REGION**



History taking

◀ PATIENT PROFILE :-

Name, age , gender, marital status, Occupation, living place, admission.

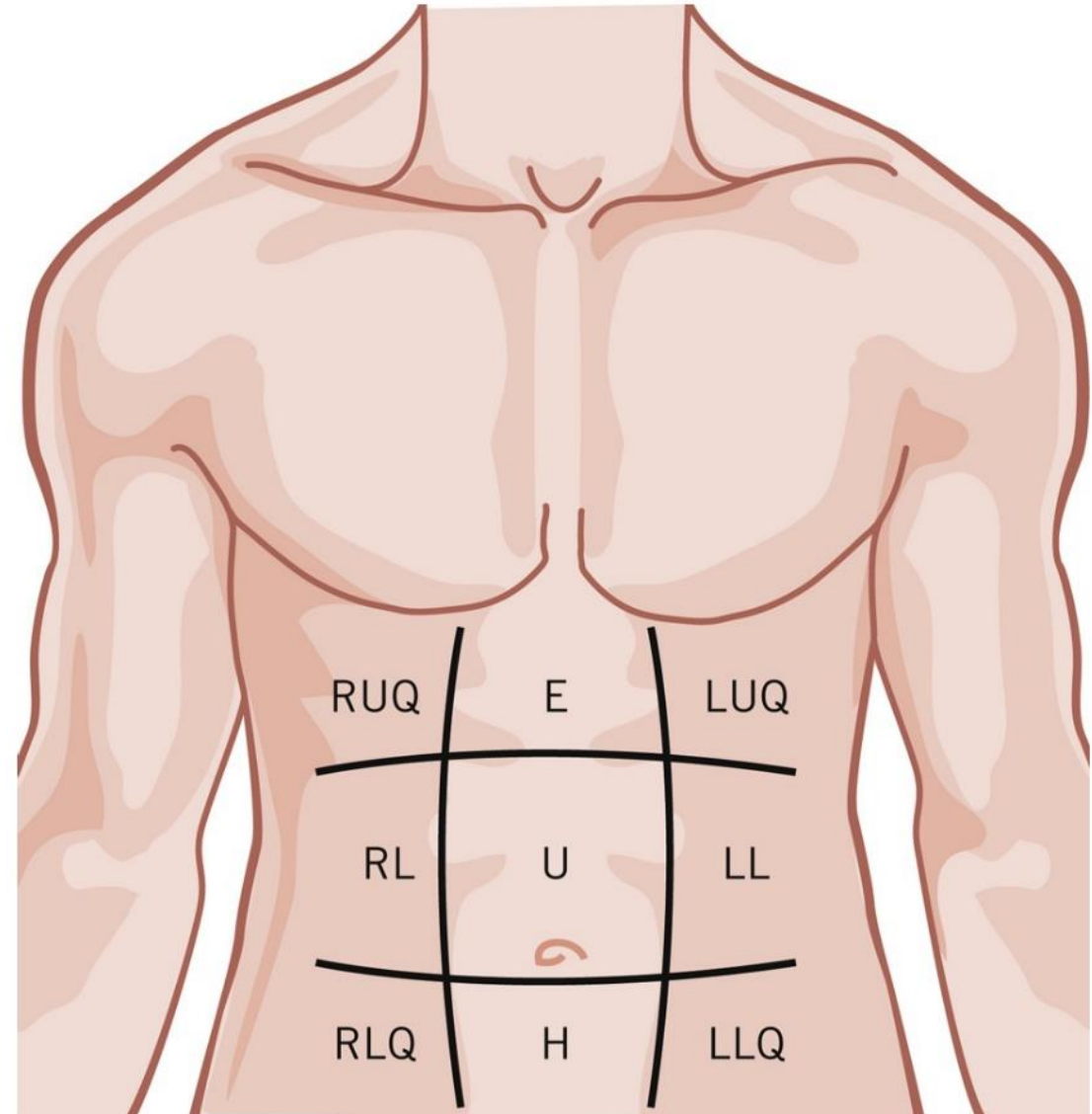
- ◀ Chief complain and duration.
- ◀ History of presenting illness.
- ◀ Past medical history and surgical HX.
- ◀ Family History.
- ◀ Social history.

History of presenting illness:-

◀ SOCRATES:-

◀ Site:-

Location of pain .



Mode of onset and progression of pain:-

Sudden onset

- ◀ Perforated disease.
 - ◀ RAA.
 - ◀ MI.

Gradual onset

- ◀ Inflammatory disease.
 - ◀ Obstructive disease.
 - ◀ Ectopic pregnancy.
 - ◀ Tumor.

Characterization:-

- ◀ Colicky pain -: lasts for a short time second or minutes, disappears and comes back again.

For example:-

Mechanical intestinal obstruction, renal stone.

- ◀ Burning pain -: peptic ulcer
- ◀ Stabbing pain -: pancreatitis
- ◀ Tearing pain -: AAA
- ◀ Biliary and renal pain -: pain rapidly increase to a peak and persists for several hours before gradually resolving, like renal and biliary colic.

Radiation:-

- ◀ **Acute cholecystitis**:- Pain radiating from the right hypochondrium to the shoulder or interscapular region.
- ◀ **Renal colic**:- Pain radiating from the loin to the groin and genitalia.
- ◀ **Pancrinitis**:- Central upper abdominal pain radiating through to the back, partially relieved by sitting forward.
- ◀ **Acute appendicitis** -: Central abdominal pain that later migrates into the right iliac fossa.
- ◀ **ruptured or dissecting abdominal aortic aneurysm**:- combination of severe back and abdominal pain.

Associated Symptoms:-

Nausea/vomiting:-

Vomiting after pain —appendicitis.

Vomiting before pain—gastroenteritis/food poisoning.

Bilious—distal to duodenum.

Hematemesis—peptic ulcer, gastritis.

Fevers/chills:-

Inflammation/infection.

Anorexia:-

Common symptom in acute abdominal pain.

Altered bowel habits:-

Bloody diarrhea -:inflammatory bowel disease,colonic ischaemia, infective gastroenteritis.

Steatorrhea -: common in coeliac disease, pancreatitis.

Constipation -: common in irritable bowel syndrome, colorectal cancer, drugs.

Absolute constipation -: intestinal obstruction

Melaena:-

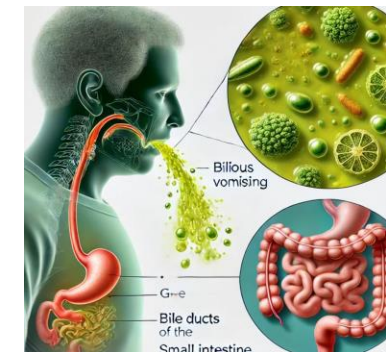
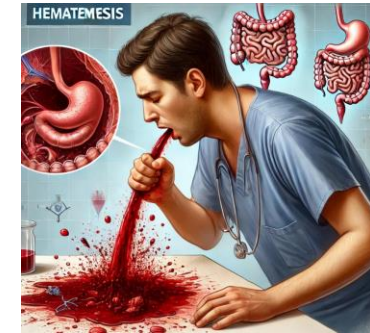
Peptic ulceration, Mallory –weiss tear.

Jaundice:-

hepatobiliary disorder (obstructive jaundice ,cholangitis, hepatitis.

weight loss:-

Cancer, inflammatory bowel disease.



Exacerbating and relieving factors :-

Movement:-

Pain may exacerbating with movements, like walking or changing positions, which can be indicative of appendicitis or peritonitis, while restless relieving pain in patient with renal colic.

Eating or drinking:-

In cases of gallbladder disease, eating a fatty meal can lead to increased pain due to gallbladder contraction (cholecystitis), in peptic ulcer the pain exacerbating by spicy food ,alcohol.

Medications:-

NSAID exacerbating the peptic ulcer pain.

Exacerbating and relieving factors :-

Positioning:-

Pancreatitis pain partially relieved by sitting forward.

Medications:-

Antacids may relieve pain caused by peptic ulcer disease or GERD.

Vomiting:-

Vomiting may relieve pain associated with bowel obstruction or acute gastritis.



Drug history:-

- ◀ (NSAID) is associated with peptic ulcer disease.
- ◀ Anticoagulants have been implicated in retroperitoneal and intramural duodenal and jejunal hematomas.
- ◀ Oral contraceptives have been implicated in the formation of benign hepatic adenomas and in mesenteric venous infarction.
- ◀ Corticosteroids, in particular, may mask the clinical signs of even advanced peritonitis.

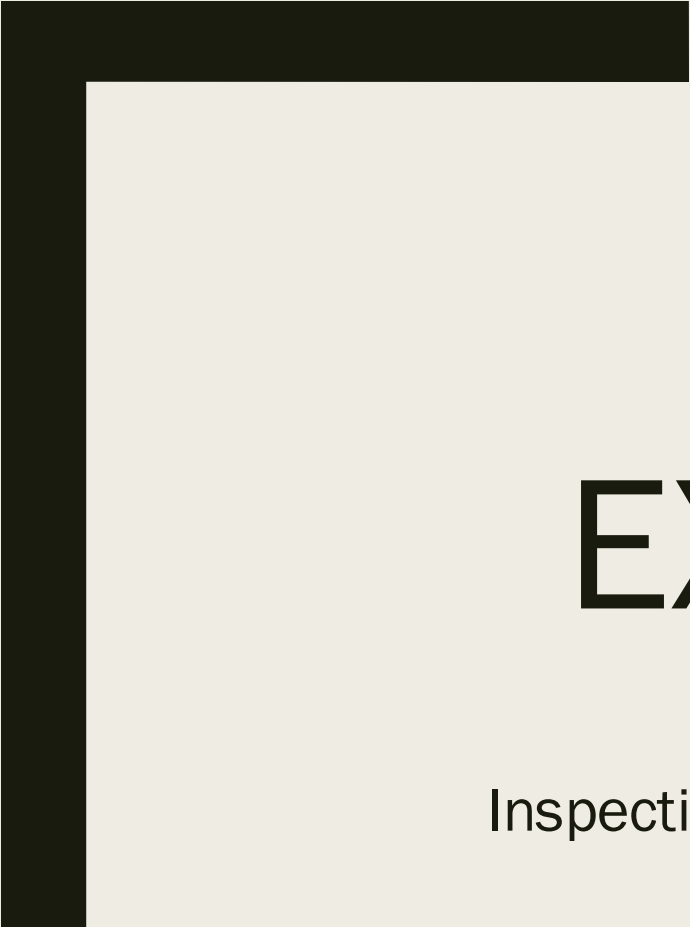
Social history:-

◀ Alcohol abuse :-

Pancreatitis, hepatitis, cirrhosis, gastritis, and peptic ulcer disease.

◀ Smoking:-

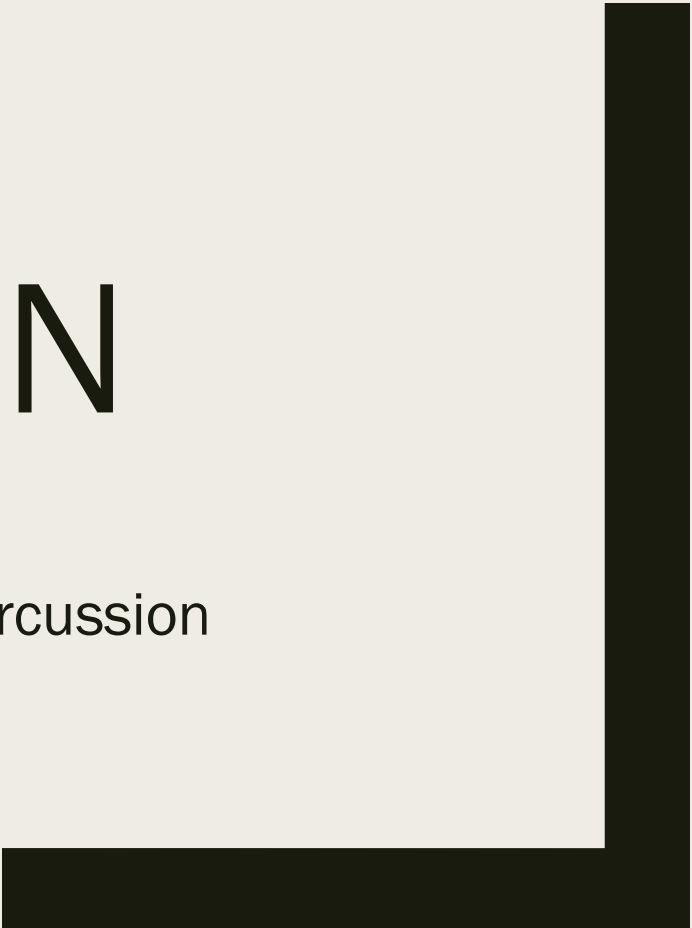
increases the probability of peptic ulcer disease.



PHYSICAL EXAMINATION

Definition & notes

Inspection , Auscultation , Palpation & Percussion



The abdominal physical examination

A focused evaluation of the abdomen to check for abnormalities or diseases

■ Notes:

- Hand hygiene & a neat appearance
- Note the patient's status , level of consciousness , ask for any pain or discomfort
- Explain procedures , obtain consent , ask for a chaperone & maintain privacy
- Patient positioning ; supine , prone , sitting ,..... .
- Observe non-verbal cues ; any pain during the examination ?
- You can't confirm a diagnosis based only on the physical examination !
- Be on the right side of the patient



■ Inspection:

Note the general appearance

Note the breathing pattern

Note the patient's position

General inspection:

Face

- Oral ulcers , Jaundice (skin/sclera yellowish)

Hands

- Palmar erythema , Clubbing , Koilonychia , Leukonychia

Legs

- Edema



■ Inspection:

Abdominal inspection :

- Scars , Masses , Abdominal distention
- Spider naevi , Caput medusae
- Aortic pulsation , Breathing pattern
- Skin pigmentation(Grey turner/Cullen sign)

■ Auscultation

Bowel sounds ; normally 5 - 15 per min

<5 = hypoactive (paralytic ileus) • >30 = hyperactive (m.obstruction , peritonitis)

Vascular sounds ; Abdominal aorta , renal A.

- Note that Auscultation comes before Palpation/percussion in the Abdominal physical examination why !? **Manipulating the abdominal wall may increase the bowel sounds !**



Caput medusae due to high portal hypertension

Spider nevi usually appears on the upper half of the body due to liver cirrhosis



Incisional hernia (mass) due to previous surgical incision

■ Palpation:

- watch the patient's face during the examination
- The examiner uses the pads of their fingers to assess the 9 Abdominal regions
- the patient must be : supine & arms by side

■ Superficial palpation :

- **Look for :** Superficial Tenderness ,
Superficial masses , Muscle tone

■ Deep palpation :

- **Look for :** Deep tenderness , Deep masses ,
Pulsations

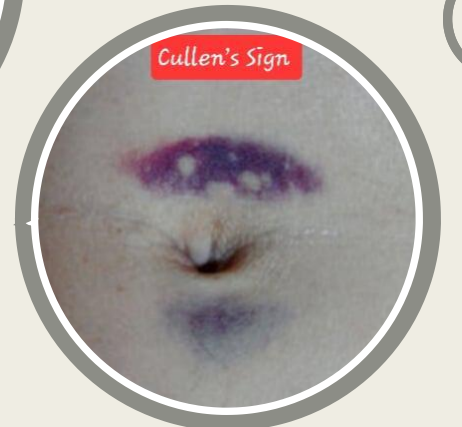
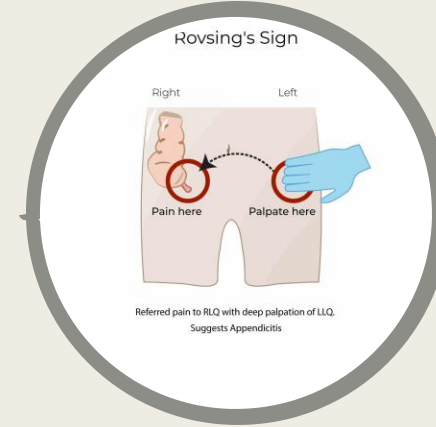


Quadrants of Abdomen and d/d of Abdominal Pains

■ Palpation:

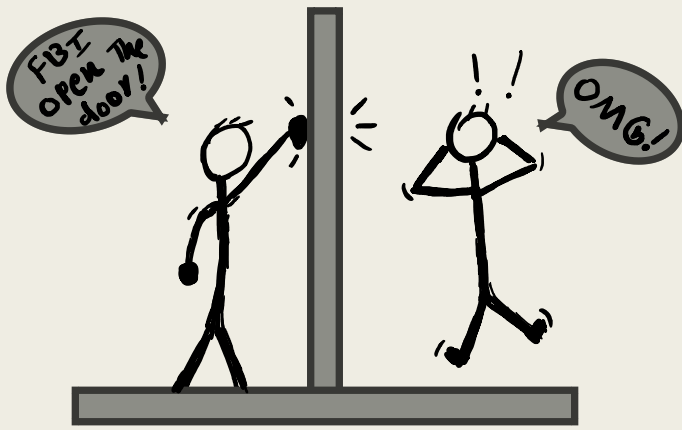
■ Signs :

- Murphy's Sign (cholecystitis)
- Rovsing's Sign (appendicitis)
- Rebound Tenderness (appendicitis)
- Psoas Sign (appendicitis)
- Obturator Sign (appendicitis)
- Cullen's Sign (intraperitoneal bleeding)
- Grey turner's Sign (retroperitoneal bleeding)
- Shifting Dullness (ascites)
- Fluid Wave Test (ascites)
- Kehr's sign (ruptured spleen | ruptured ectopic pregnancy)



■ Percussion:

- **Resonance/hyper-resonance** (high air amount)
 - severe Constipation , intestinal obstruction
- **tympanic** (low air amount) drum-like
- **Dullness** (Solid or fluid)
 - tumors , ascites

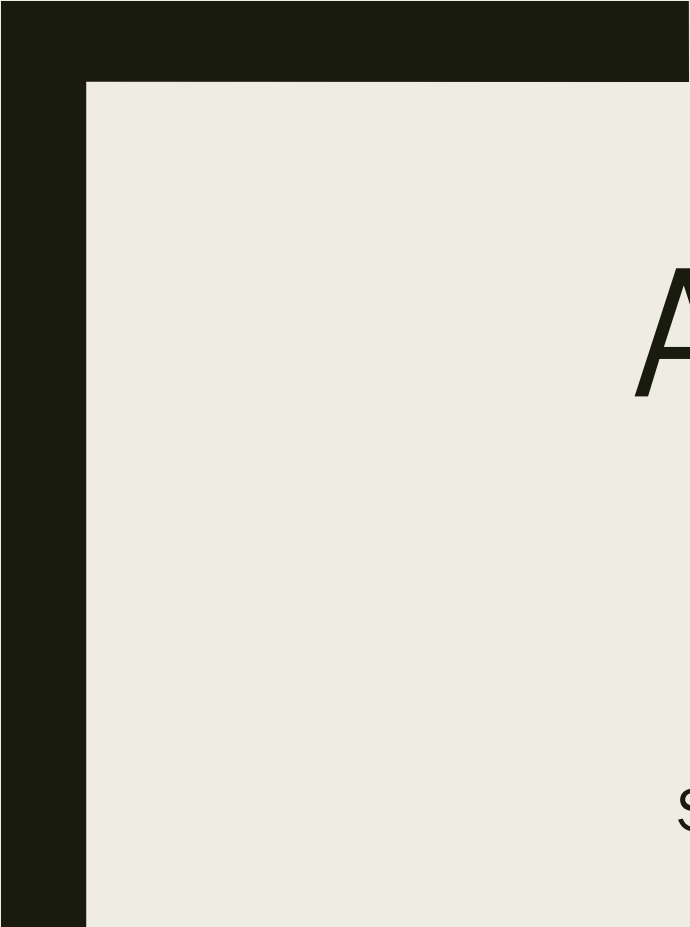


■ Notes :

- percussion will cause pain if peritonitis present
- Liver dullness loss may indicate air under diaphragm
- percussion over a full urinary bladder (suprapubic region) will produce a dull sound
- Percussion is helpful in assessing or ascites (shifting dullness)

Common conditions that cause acute Abdominal pain

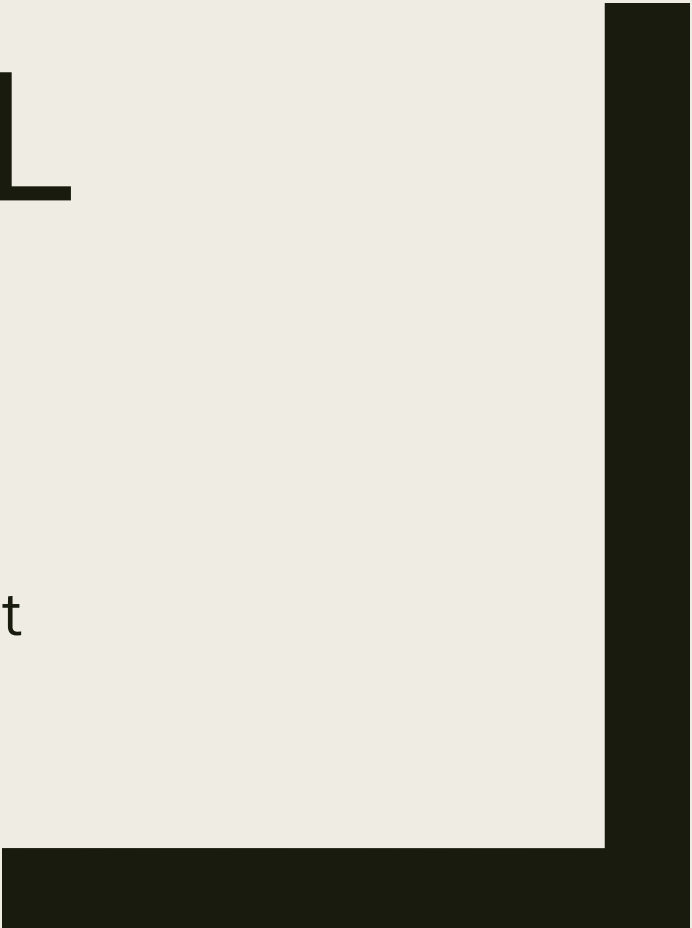
- Trauma
- Inflammatory
- Obstructive
- Ischaemic
- Perforation
- Gynecological



ABDOMINAL TRAUMA

Definition & Types

Symptoms , Diagnosis & treatment



■ **Trauma** : Is a physical or emotional injury caused by distressing events such as accidents , violence or abuse

■ **Trauma types :**

- **Blunt trauma**

- caused by impacts , falls , collisions that cause internal damage without breaking the skin

- **Penetrating trauma**

- Involves sharp objects (knife / gun shoots)

- **Psychological trauma**

- Severe emotional stress or trauma can manifest physically as Abdominal pain such as :

Psychogenic abdominal pain / Irritable bowel syndrome



■ Symptoms :

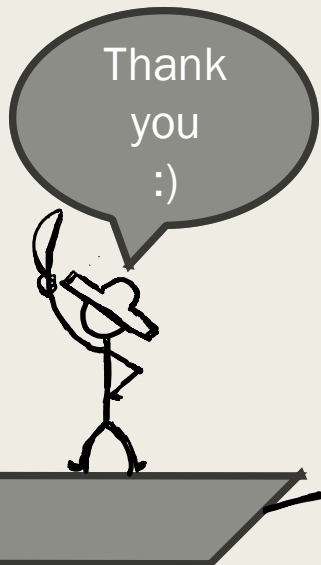
- Physical : pain , swelling , bleeding , deformities , loss of function in affected area
- Emotional : depression , anxiety , difficulty concentrating , nightmares

■ Diagnosis :

- Physical : Physical examination , imaging (CT-scans , X-rays ,...)
- Emotional : Psychiatric evaluation , PTSD checklists

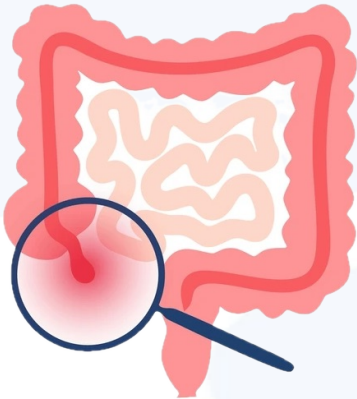
■ Treatment :

- Physical : pain management , wound care , surgery , physical therapy
- Emotional : Psychotherapy , medication , support groups

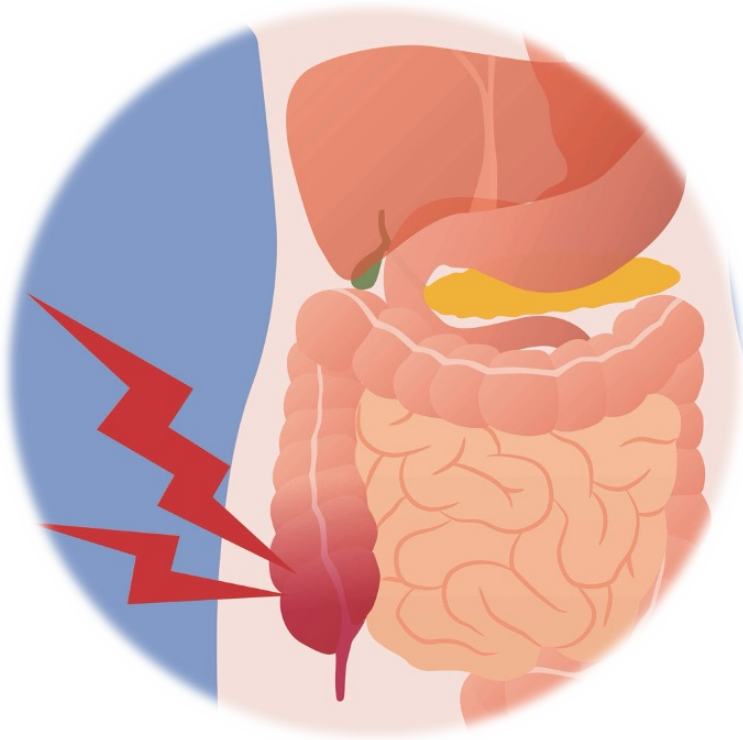


ACUTE APPENDICITIS

DONE BY:FERAS ATIEH



ACUTE APPENDICITIS



OUTLINE

- Introduction
- Causes
- Pathophysiology
- Symptoms
- Physical examination signs
- Diagnosis
- Alvarado score
- Treatment and management

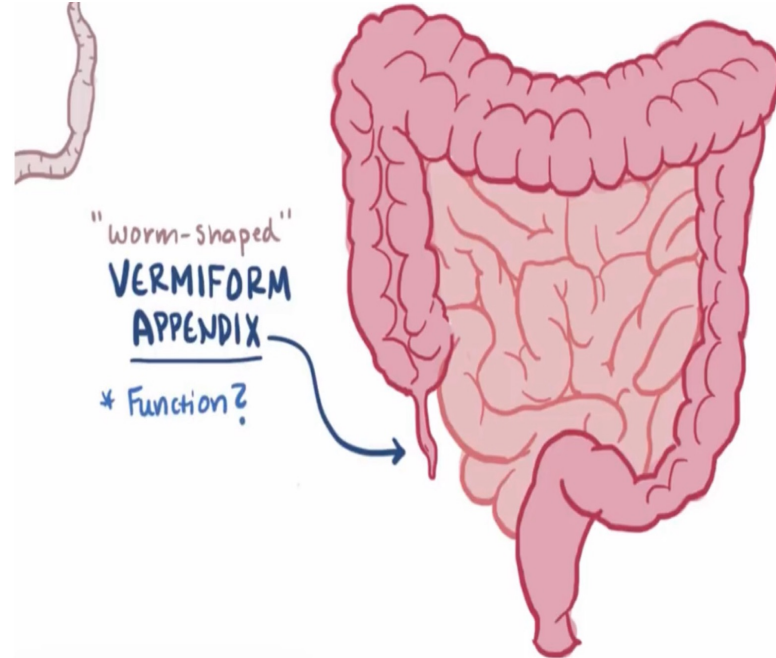
INTRODUCTION

Appendix

-The appendix is the little one-ended tube that's attached to the cecum of the large intestine

-sometimes it's called the vermiform appendix, where vermiform means "worm-shaped"

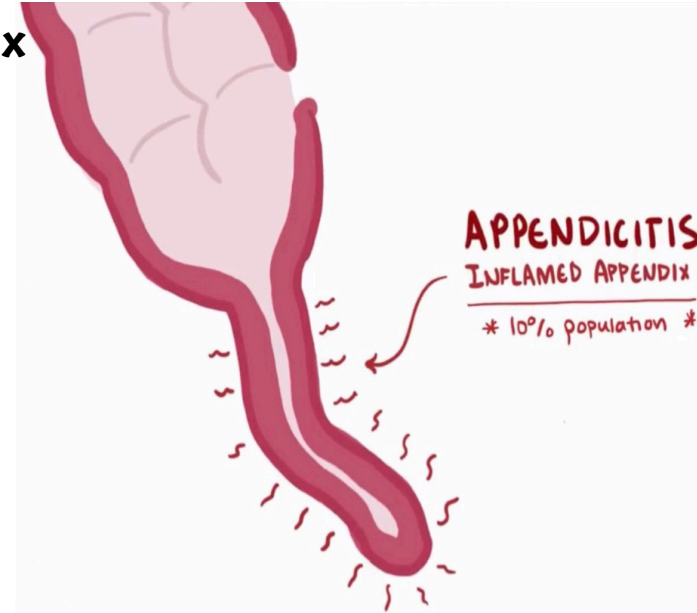
-its function is unknown



INTRODUCTION

Appendicitis

- Appendicitis is the inflammation of the appendix
- 10% of the population develops appendicitis
- its the most common surgical emergency of the abdomen



CAUSES

-Since the appendix is a hollow tube, the most common cause of inflammation is something getting stuck in or obstructing that tube like a:

1-**fecalith**: a hardened lump of fecal matter that finds it's way into the the lumen of the appendix and wedges itself there

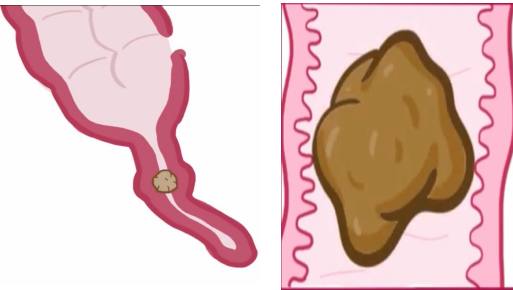
2-**seeds** that weren't digested

3-**pinworm** infections

4-lymphoid follicle growth also known as **lymphoid hyperplasia**

Lymphoid follicles are dense collections of lymphocytes that get to their maximum size in the appendix during adolescence

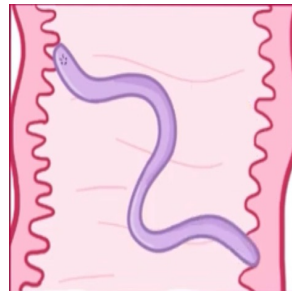
FECALITH



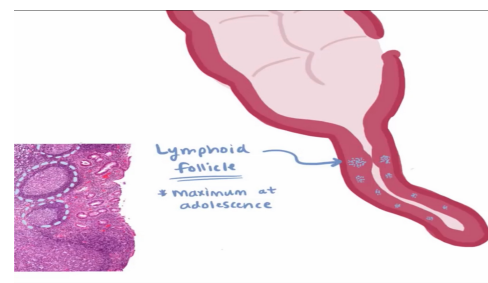
SEED



PINWORM

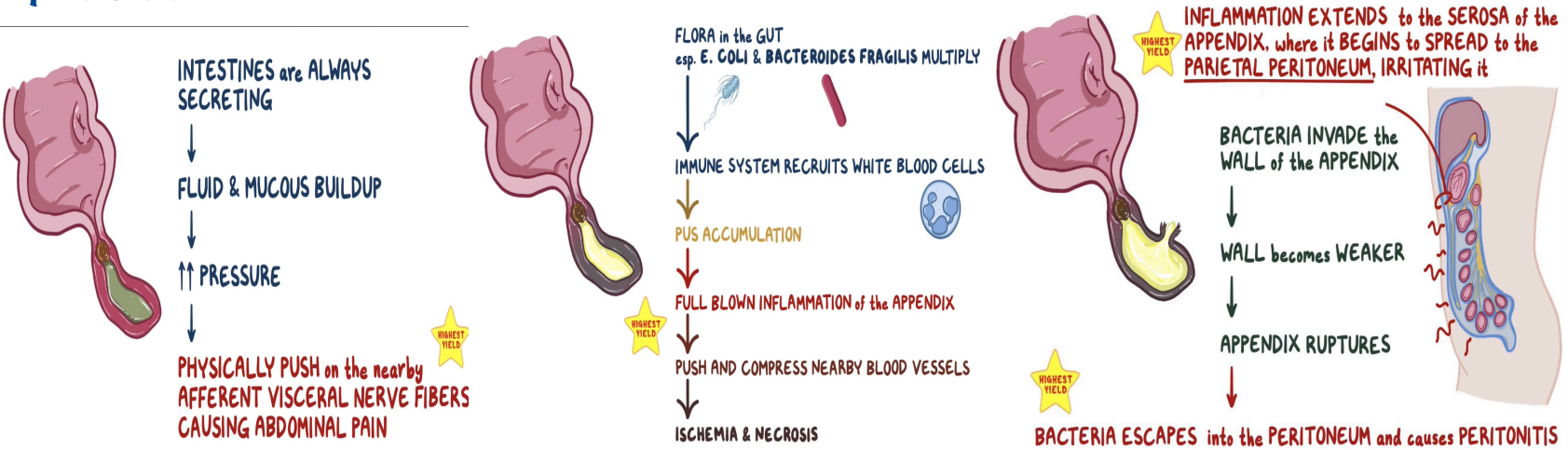


LYMPHOID HYPERPLASIA



PATHOPHYSIOLOGY

now because the intestinal **Lumen** is always secreting mucus and fluids from its mucosa, fluid and mucus build up in the obstructed appendix, which increases the pressure in the appendix making it to grow bigger and physically pushes on the afferent visceral nerve fibers nearby, causing abdominal pain along with that the Flora and the bacteria in the gut usually *E. coli* and *Bacteroides fragilis* will multiply in the appendix, This causes the immune system to recruit white blood cells and pus starts to accumulate. now as the pressure keeps growing and the appendix continues to swell up, it will push on and compress nearby small blood vessels causing ischemia and local necrosis of the appendix wall cells. now the wall of the appendix becomes weaker and weaker to the point where the appendix can rupture. Rupture of an infected appendix allows the bacteria to escape into the peritoneum and cause peritonitis



SYMPTOMS

-At Early stages:

- sudden onset, constant **periumbilical abdominal pain**
- followed by nausea, vomiting and fever

-within 24-48 hours:

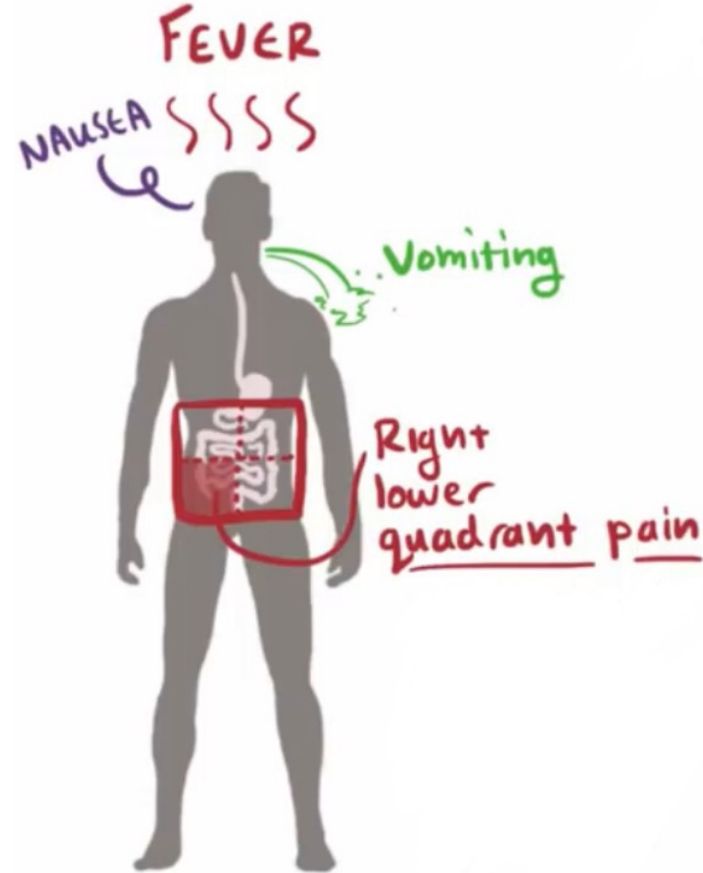
- appendix becomes more swollen and irritates the abdominal wall



Severe pain ↑↑↑



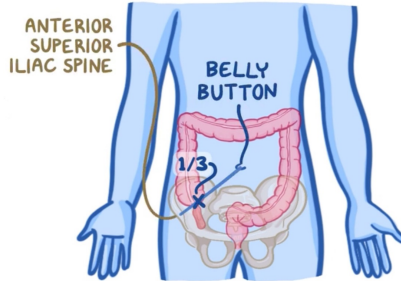
Migrates to right lower quadrant
And is usually worse in movement



PHYSICAL EXAMINATION SIGNS

1-MCBURNEY'S SIGN

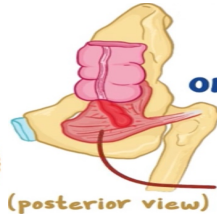
- TENDERNESS at MCBURNEY'S POINT
- LOCATED 1/3 of the DISTANCE from the ANTERIOR SUPERIOR ILIAC SPINE to the BELLY BUTTON



3-OBTURATOR SIGN

- flexing the patient's right hip and knee, then internally rotating the hip

Since the inflamed appendix lies in the pelvis it will cause irritation of the obturator internus muscle



OBTURATOR SIGN

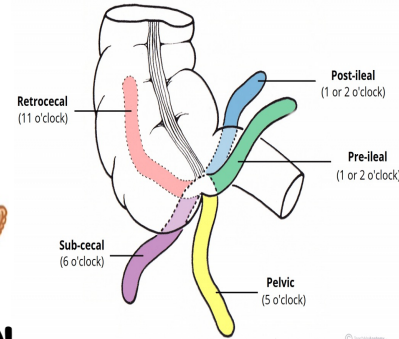
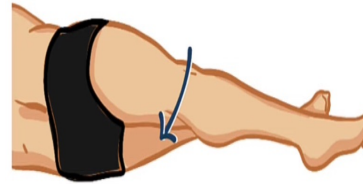
OBTURATOR INTERNUS MUSCLE

(posterior view)

2-PSOAS SIGN

- PAIN on EXTENSION of RIGHT HIP (RETROCECAL APPENDICITIS)

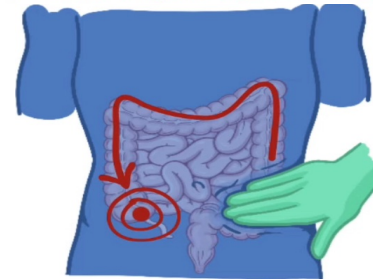
PSOAS SIGN



4-ROUSING'S SIGN

- PALPATION of LEFT LOWER QUAD

PAIN in RIGHT LOWER QUAD



Diagnosis

Lab tests

* BLOOD TESTS

- WBC COUNT $\uparrow$ w/ NEUTROPHIL PREDOMINANCE
- DEHYDRATION OR FLUID/ELECTROLYTE IMBALANCES



* URINALYSIS

- RULE OUT GENITOURINARY CONDITIONS
- IRRITATION OF BLADDER / URETER BY INFLAMED APPENDIX
 - ↳ MILD $\uparrow$ URINARY WBC COUNT
- $\uparrow\uparrow$ WBC ELEVATION SUGGESTS UTI



* PREGNANCY TEST

- RULE OUT ECTOPIC PREGNANCY
- postmenarcheal pediatric cases should get a **Urine Pregnancy Test**
- Adults should obtain a **Serum Pregnancy Test**



Diagnosis

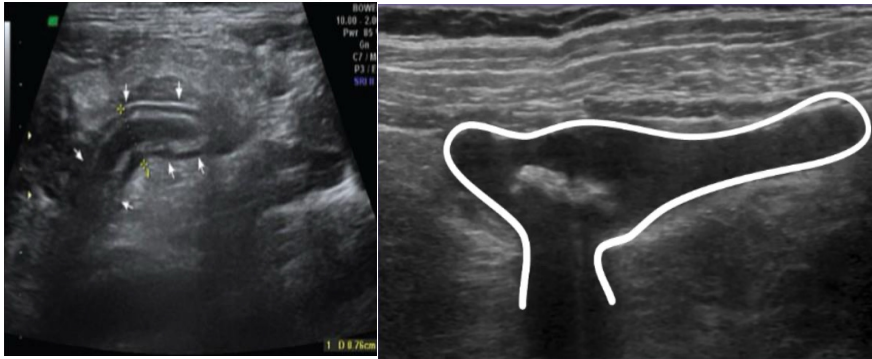
Imaging

* **ULTRASOUND is the FIRST CHOICE**

* ENLARGED APPENDIX

* DIAMETER > 6 mm

* PERIAPPENDICEAL FAT (IF THERE'S AN ABSCESS)



* **CT SCAN IS DONE as a FOLLOW-UP**
if **ULTRASOUND is INCONCLUSIVE**

ALVARADO SCORE

-is a clinical scoring system used in the diagnosis of appendicitis

*The scoring system:

It includes a total score range (0-10) and note that a score of:

<4 points: **unlikely to have appendicitis**

5-6 points: **Possible appendicitis**

7-8 points: **Probable appendicitis**

9-10 points: **Very probable appendicitis**

Alvarado score	
Feature	Score
Migration of pain	1
Anorexia	1
Nausea	1
Tenderness in right lower quadrant	2
Rebound pain	1
Elevated temperature	1
Leucocytosis	2
Shift of white blood cell count to the left	1
Total	10

TREATMENT AND MANAGEMENT

*Pre-op management:

- Rehydration with IV fluid (Ringer lactate)
- prophylactic Antibiotic with anaerobic coverage (cefoxitin/cefotetan/ciprofloxacin)

*Op management:

A. IF NOT PERFORATED:

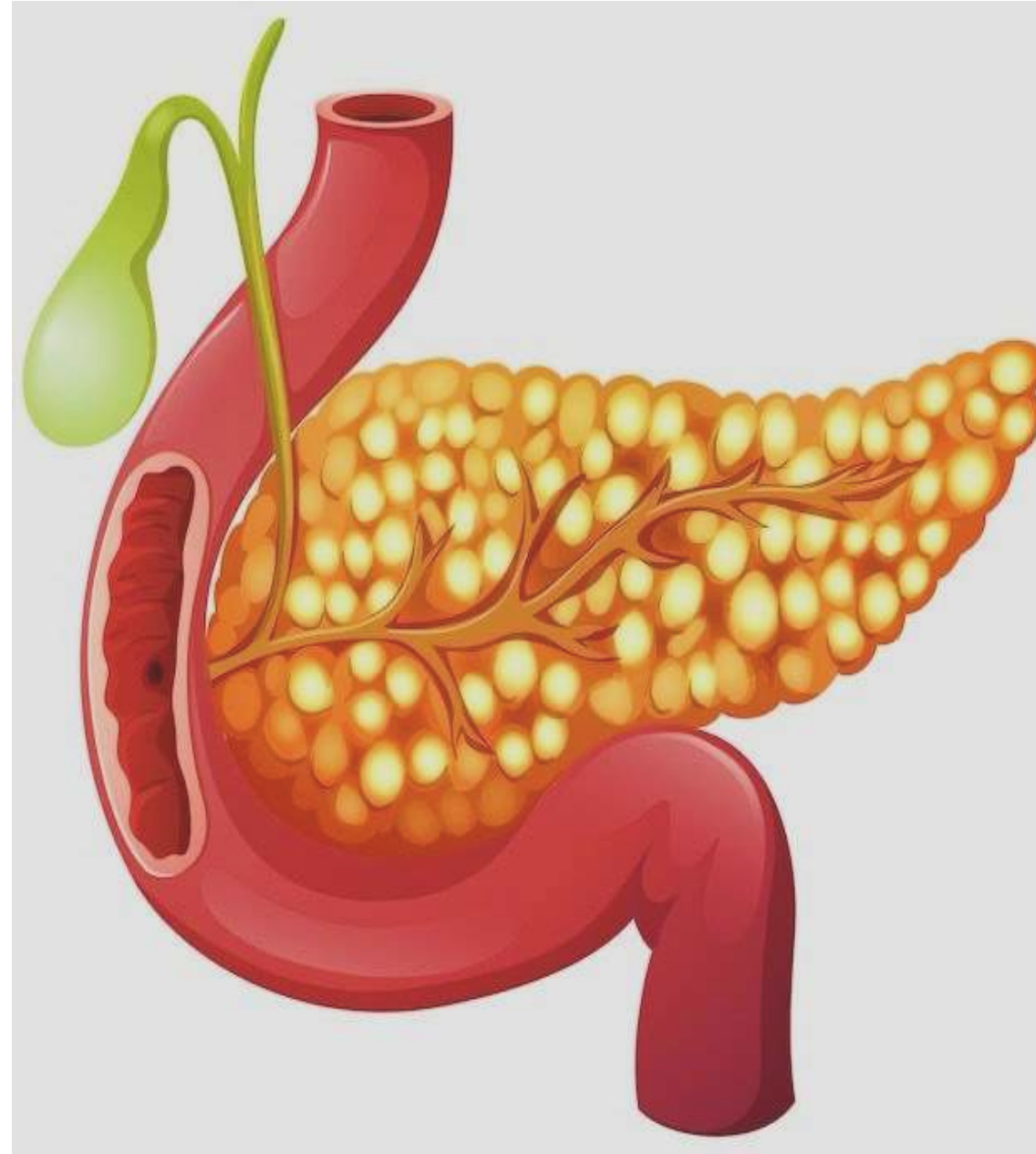
- Prompt **appendectomy** to prevent perforation with up to **24 hours antibiotics** “anaerobic coverage”

B. IF PERFORATED:

- Initial treatment:** IV fluid resuscitation to stabilize the patient.
- Surgery:** Prompt appendectomy to remove the appendix.
- During surgery:** Drainage of all pus from the infection site.
- Post-surgery:** 3-7 days of antibiotics to treat and prevent further infection.

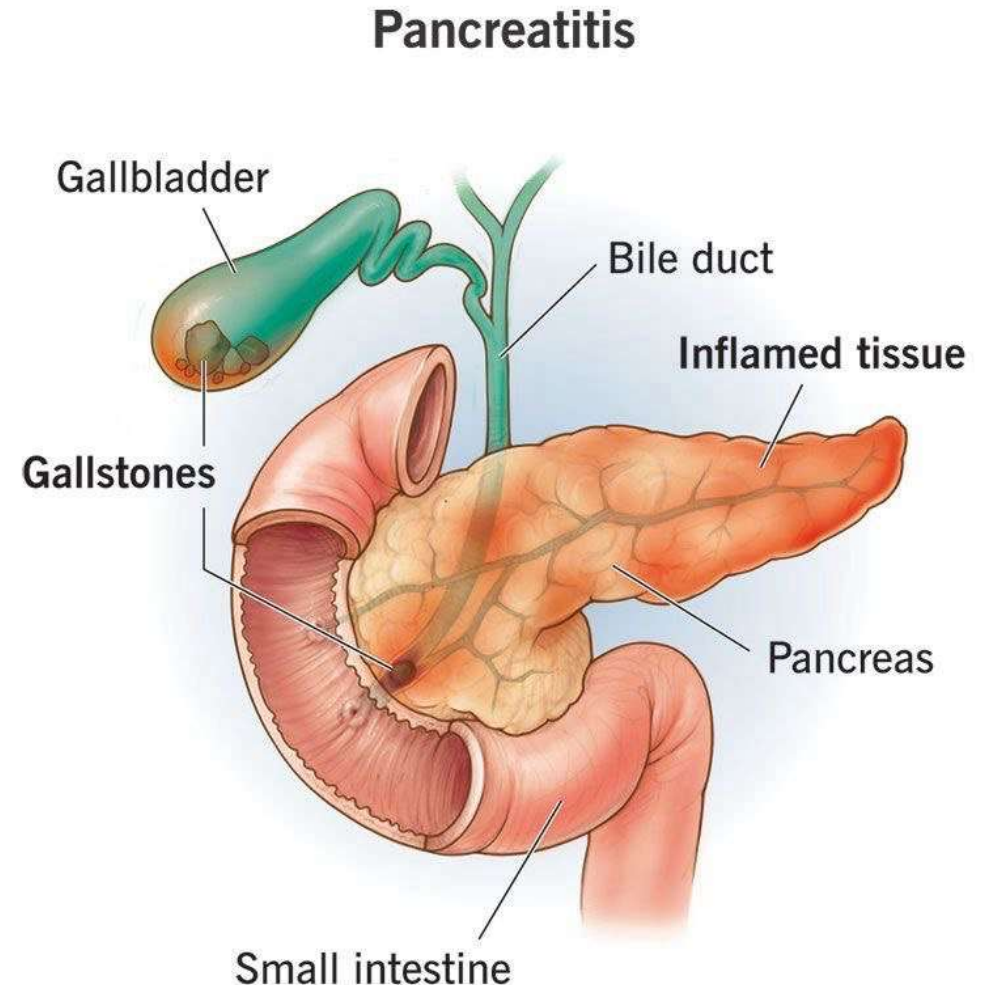
Acute Pancreatitis

Batool Jaber

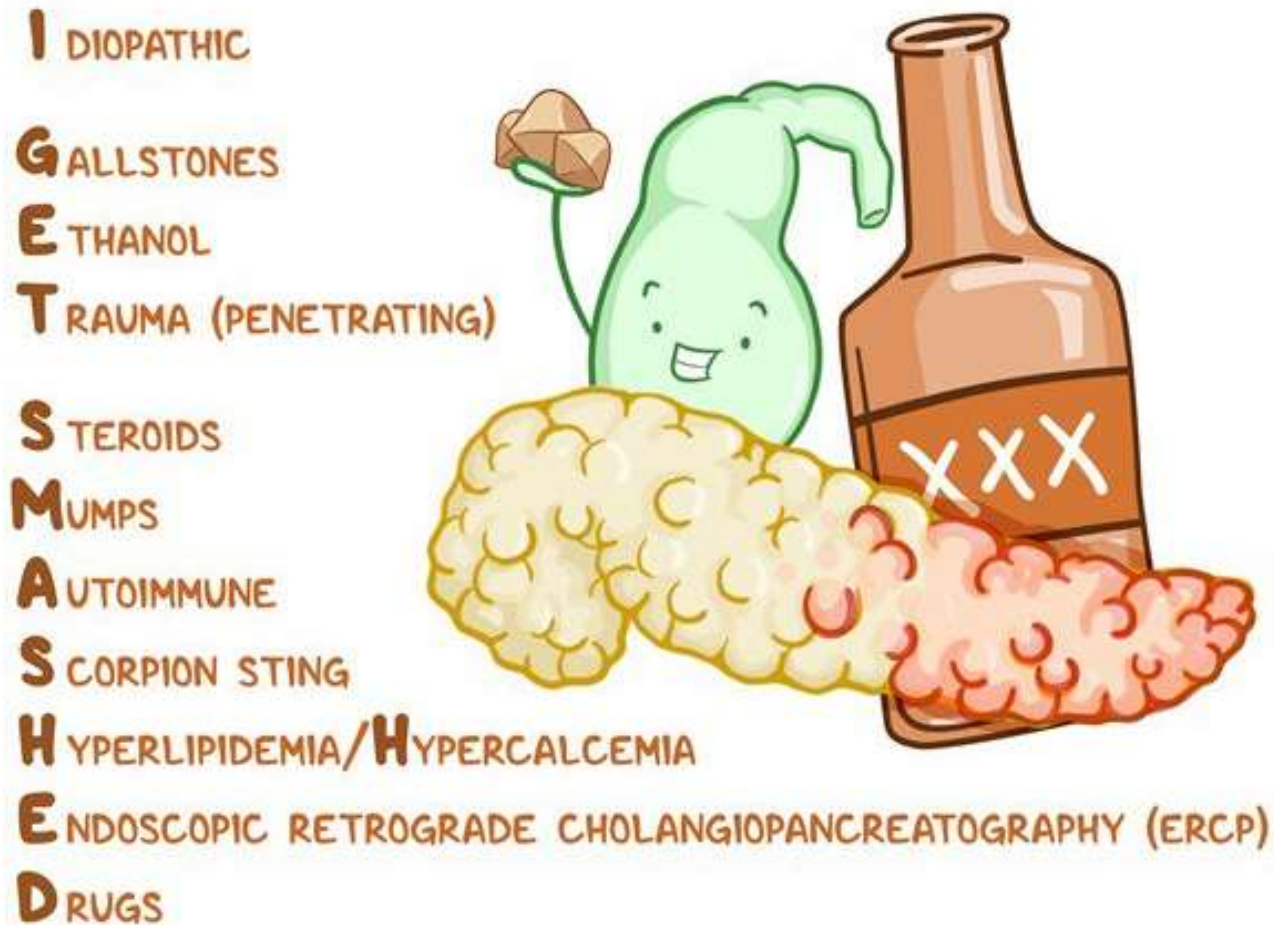


Introduction

Acute pancreatitis is inflammation of the pancreas which can be distinguished from chronic pancreatitis by its limited damage to the secretory function of the gland with no gross structural damage developing



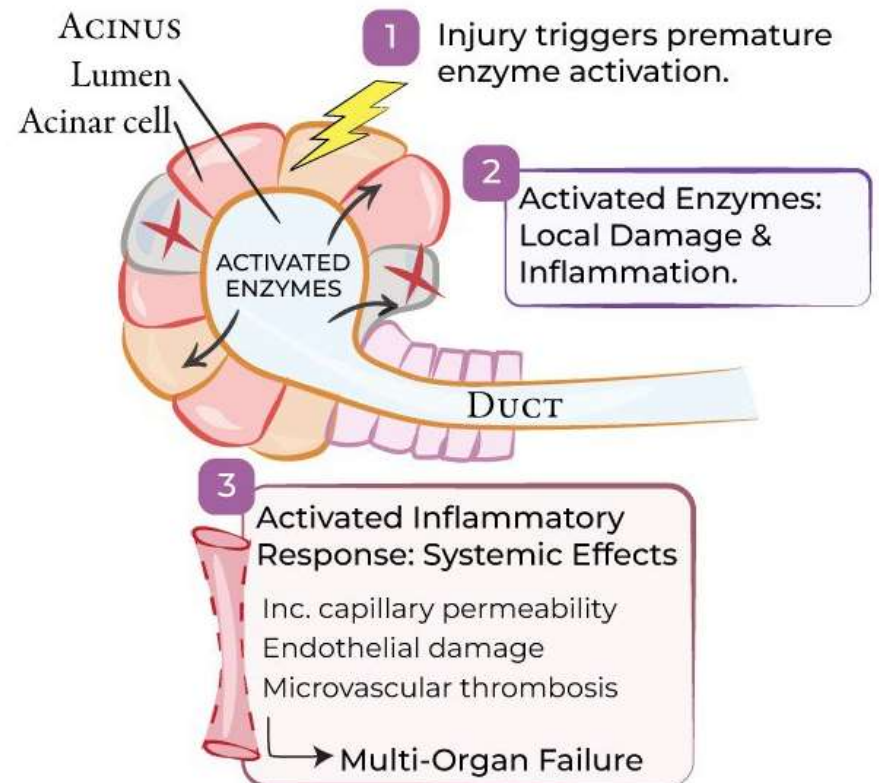
Aetiology “GET SMASHED”



Pathophysiology

Each cause will trigger an exaggerated activation of the digestive enzymes within pancreas resulting in pancreatic inflammatory response and autodigestion of fat and blood vessels

Acute Pancreatitis



Clinical Features

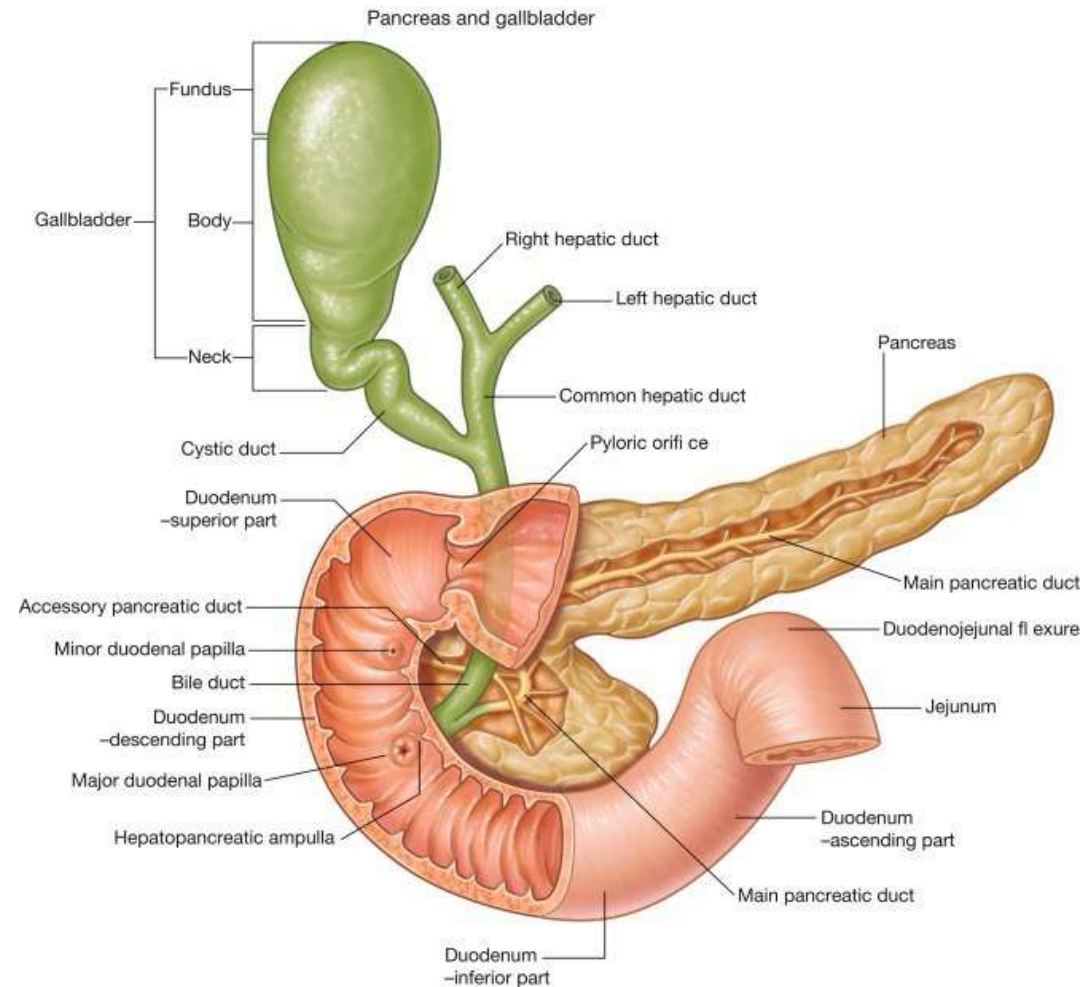
Symptoms: severe sudden epigastric pain radiating to the back, nausea, vomiting and fever

On Examination: epigastric tenderness with or without guarding, Cullen's sign (bruising around the umbilicus), Grey Turner sign (bruising in the flank), Tetany (hypocalcemia), Obstructive jaundice



Obstructive Jaundice

common bile duct and pancreatic duct they both empty into the duodenum at ampulla of vater any obstruction in this area due to gallstones or tumor affect both bile flow which causes jaundice and pancreatic enzymes which cause autodigestion of the pancreas resulting in its inflammation



Manegment and Treatment

No curative manegment, supportive measures are the mainstay treatment .. treat underlying cause, IV fluids, nasogastric tube, opiod analgesics and broad spectrum antibiotics

Pancreatitis - Treatment

1. IV Fluids

2. NPO Status

- Start oral feeds once tolerated

3. Pain/Symptom Control

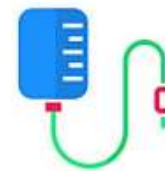
- Analgesics, Antiemetics

4. Antibiotics Not Necessary

- Unless concern for infectious complications

5. Intervention

- ERCP, cholecystectomy, etc.



Lab and Imaging Findings

Lab : serum amylase or lipase (lipase is more specific) it should be 3x normal

Imaging : abdominal Ultrasound to identify any gallstones, axial CT scan shows “sentinel loop sign” (dilated proximal bowel loop adjacent to the pancreas which occurs secondary to localized inflammation)

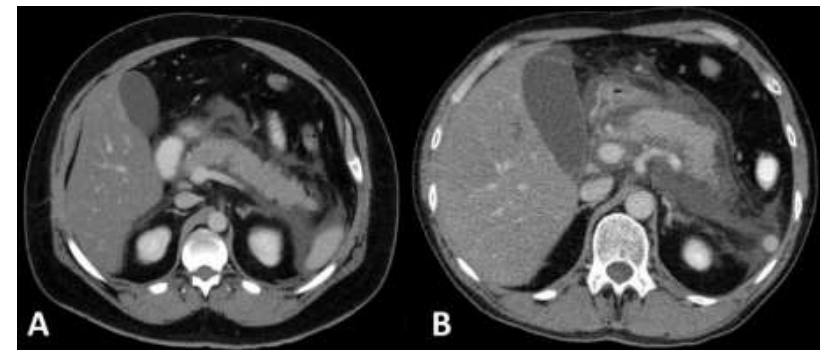
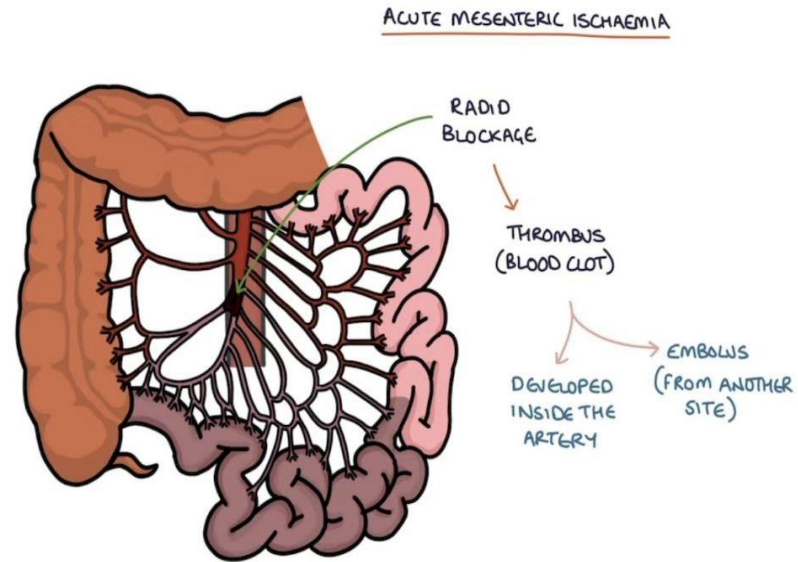


Figure 3 - Pancreatitis on Axial CT Scan (A) Localised oedema around the pancreas (B) Extensive fluid collections around the pancreas

Acute mesenteric ischemia

Done by :Rama Aljolani



Definition

Is typically defined as a group of diseases characterized by an interruption of the blood supply to varying portions of the small intestine, leading to ischemia and secondary inflammatory changes. If untreated, this process will eventuate in life threatening intestinal necrosis. The incidence is low, estimated at 0.09-0.2% of all acute surgical admissions. Its either :1- occlusive mesenteric ischemia
2- non occlusive mesenteric ischemia

4 major causes :

- 1.Superior mesenteric artery embolism(50%)
- 2.Superior mesenteric artery thrombosis (15-25%)
- 3.Mesenteric venous thrombosis (5%)
- 4.Non-occlusive ischemia (20-30%)

RISK FACTORS

1. Age greater than 50 years
2. Congestive heart failure, Digitalis therapy
3. Recent transmural myocardial infarction
4. Cardiac dysarrhythmias especially atrial fibrillation
5. Hypercoagulable state
6. Hypovolaemia with hypoperfusion.



Normal Heart Rhythm



Atrial Fibrillation Heart Rhythm

Pathology

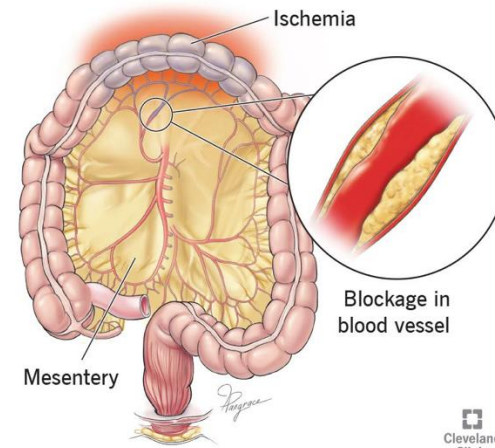
Damage to the affected bowel portion may range from reversible ischemia to transmural infarction with necrosis and perforation

1. The early changes ,alteration in capillary permeability.
2. Mucosal sloughing may cause bleeding into the gastrointestinal tract
3. As the ischemia persists, the mucosal barrier becomes disrupted, and bacteria, toxins, and vasoactive substances are released into the systemic Circulation
- 4 .The bowel wall becomes edematous and cyanotic. Fluid is released into the peritoneal cavity
5. Transmural necrosis

CLINICAL FEATURES

Symptoms are nonspecific initially,

1. Medical history may be significant for presence of stroke, MI, or peripheral artery disease
2. Patients may present with a long history of weight loss, postprandial pain, and phagophobia
3. abdominal pain :severe, acute, unrelenting abdominal pain
4. Vomiting
5. frank blood in the stools

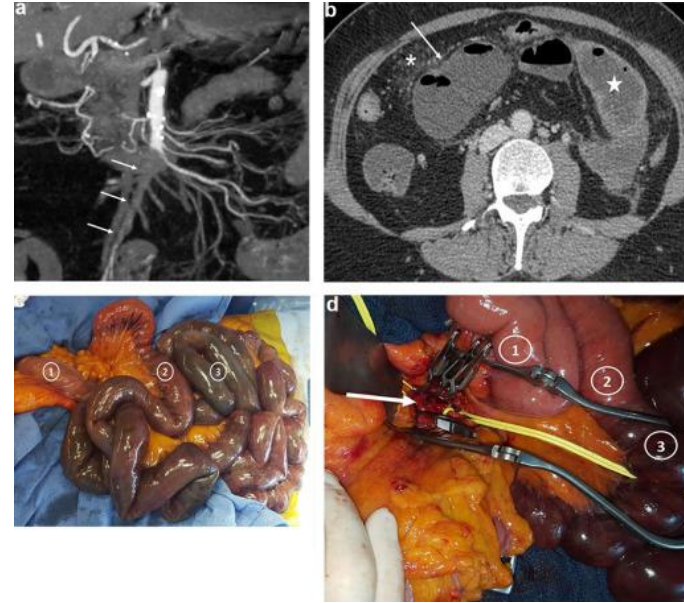


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On abdominal examination ,the findings may be minimal. if signs of peritonitis present, consider bowel perforation

DIAGNOSIS

1. Clinical features: the high index of suspicion
2. Leucocytosis : >15000
3. ECG
4. Moderately Elevated serum amylase
5. Metabolic acidaemia
6. A doppler ultrasound,
7. CT scan, CT angiogram.
8. Angiography, selective S.M.A.



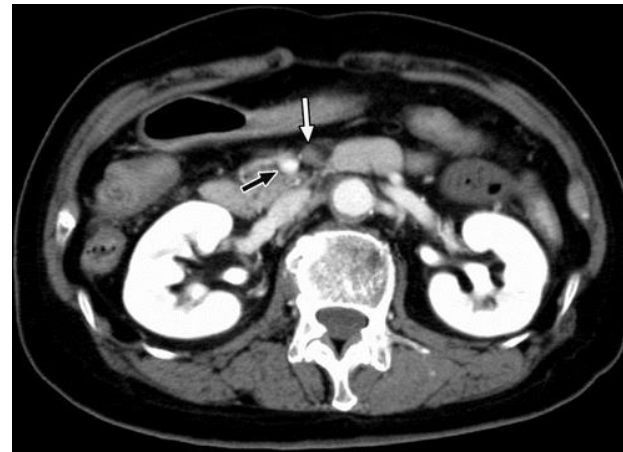
On plain films Late findings include:

- intramural air
- air in the portal venous system. If bowel perforation occurs
- free air in the abdomen may be observed



CT scan findings with a specificity greater than 95% include :

- SMA or SMV thrombosis,
- intestinal pneumatosis,
- portal venous gas,



Treatment of Acute Mesenteric Ischemia

Treatment options depend on the etiology of intestinal ischemia, as well as on the hemodynamic stability of the patient. Generally speaking, nonocclusive AMI is treated medically, whereas occlusive AMI is correctable with surgery.

1. Angiographic: Vasodilators or thrombolysis
2. Surgical: Embolectomy, revascularization, with or without bowel resection
3. Long-term anticoagulation or antiplatelet therapy
4. A “second look” laparotomy may be needed to reassess the viability of questionable areas of bowel

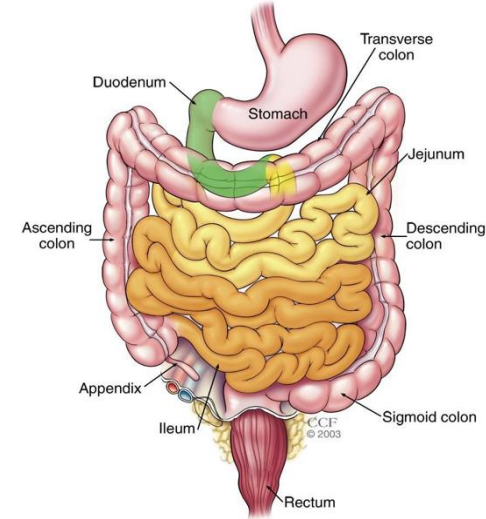
Bowel obstruction

Definition :Obstruction of the GIT may occur at any level, but the small intestine is most often involved because of its relatively narrow lumen.

Classification:

1.Mechanical (dynamic) :Bowel capable of contracting normally or excessively proximal to a local site of obstruction

2.Non mechanical (a dynamic) :Peristalsis maybe absent (paralytic ileus) , OR present in propulsive form (mesenteric vascular occlusion ,pseudo_ obstruction) .



Causes of dynamic bowel obstruction:

{Intraluminal }

- Impaction
- Foreign bodies
- Bezoars
- Gallstone

{Intramural }

- Congenital atresia
- Stricture
- Malignancy

{Extramural }

- Bands/ adhesion
- Hernia
- Volvulus
- Intussusception
- Tumor- benign/malignant

Causes of adynamic bowel obstruction:

1-PostOP ileus

2-Peritonitis,Sepsis,Shock

3-Drugs (opiates / anticholinergic)

4-Electrolyte abnormalities (Hypokalemia)

Sign and Symptoms:

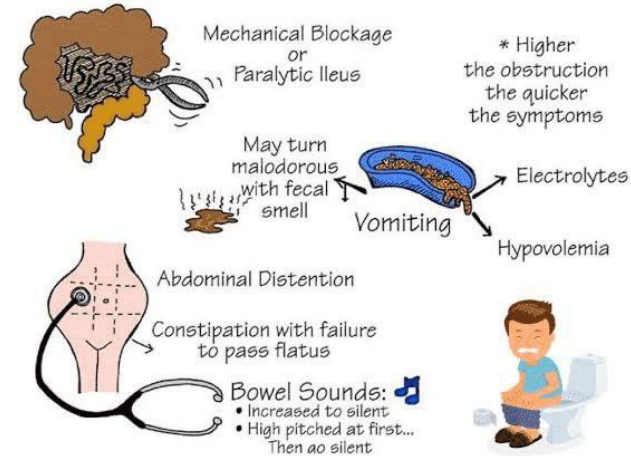
*Common Symptoms:

1. Abdominal pain
2. Nausea and vomiting
3. Abdominal distension
4. Constipation or inability to pass gas

*Other Indicators:

1. Hyperactive bowel sounds (early stage)
2. Absent bowel sounds (late stage)
3. Dehydration

BOWEL OBSTRUCTION



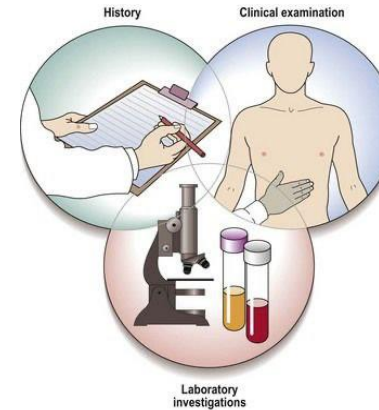
INVESTIGATION LABS and IMAGING

- CBC
- Serum electrolytes
- Creatinin
- BUN (blood urea nitrogen)
- Urine analysis
- Abdominal x-ray
- CT

History and physical examination:

History:

- History of cardinal symptoms
- Don't forget to ask about previous abdominal surgery ,previous colonoscopy, previous irradiation
- History of hernia
- Changes in bowel motion, symptoms of anemia
- Tenesmus,blood per rectum, weight loss, family hx of IBD ,family history or personal hx of colon cancer



Physical examination:

- General appearance
- Vital sign and assessment of hydration status
- Abdominal exam looking for level of distention, tenderness, skin changes
- Hernia orifice examination(looking for strangulation hernia sign)
- Auscultation
- Don't forget to do digital rectal examintaion

MANAGEMENT

Strangulated obstruction or peritonitis:

- requires prompt operative intervention
- Fluid / electrolyte resuscitation and nasogastric (NG) tube, decompression is important in the preoperative preparation of the patient

Non strangulated obstruction:

- It can be treated non operatively if the patient is stable
- Fluid resuscitation and NG decompression
- close observation with serial abdominal examinations every 4 to 6 hs, if the patient develops signs of shock or peritonitis or fail to improve within a fewdays laparotomy is indicated

Perforations

Presented by : Mohammad Alomari

Common causes

1. Peptic Ulcer Disease
2. Diverticulitis
3. Appendicitis
4. Inflammatory Bowel Disease (e.g., Crohn's disease, ulcerative colitis)
5. Colorectal Cancer
6. Bowel Obstruction

Peptic Ulcer Perforations

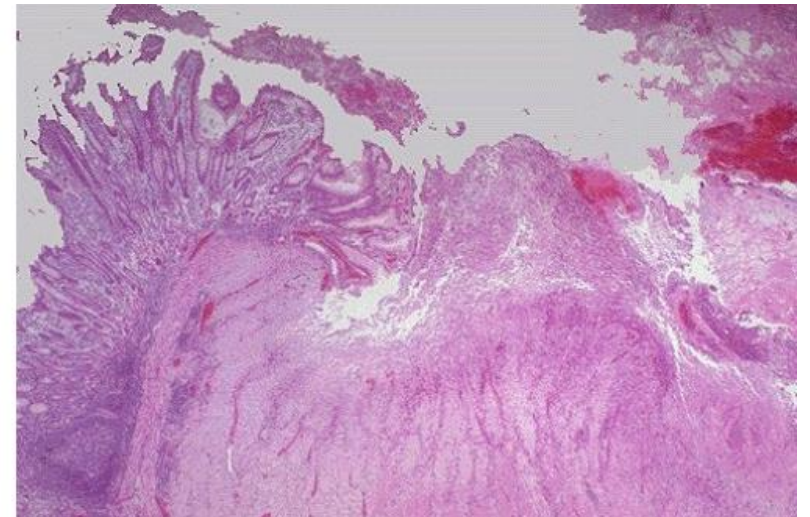
❑ **Peptic ulcers** are open sores that develop on the inner lining of the stomach and the upper part of the small intestine.

❑ **Types:**

- **Gastric Ulcers:** Occur inside the stomach.
- **Duodenal Ulcers:** Occur inside the duodenum, and it is more common than gastric ulcers

❑ **Risk Factors:**

- Infection with *Helicobacter pylori* (*H. pylori*)
- Long-term use of NSAIDs (e.g., ibuprofen, aspirin)
- Smoking
- Excessive alcohol consumption
- Stress and spicy foods



Peptic Ulcer Perforations (cont)

❑ **Definition:** A peptic ulcer perforation is a hole that forms through the entire wall of the stomach or duodenum, leading to leakage of gastric contents into the abdominal cavity.

❑ **Risk Factors:**

- History of peptic ulcers, coming with :
 - Advanced age
 - Use of corticosteroids
 - Severe illness or stress

❑ **Pathophysiology:**

- **Gastric Acid and Pepsin:** Chronic exposure to gastric acid and pepsin leads to mucosal damage and ulcer formation.
- **Inflammation:** Persistent inflammation weakens the gastric or duodenal wall.
- **Perforation:** Eventually, the ulcer erodes through the full thickness of the wall, causing perforation and leakage of contents into the peritoneal cavity, leading to peritonitis.

Peptic Ulcer Perforations (cont)

❑ Clinical presentation:

- Sudden, severe abdominal pain that often starts in the **upper abdomen** and can spread throughout the abdomen.
- Signs of peritonitis such as a rigid, board-like abdomen and rebound tenderness.
- Nausea and vomiting.
- Signs of shock including low blood pressure, rapid heart rate, and sweating.

❑ Management:

- Stabilization, checking vitals, giving IV fluids and antibiotics.
- Imaging (x-ray or CT scan) to confirm perforation.
 - On x-ray : Free air under diaphragm or in lesser sac in an upright CXR.
- Immediate surgical intervention.
- Post operative management includes giving acid suppression therapy like proton pump inhibitors, to prevent further progression, analgesics to relieve pain, and continuing on the antibiotics.



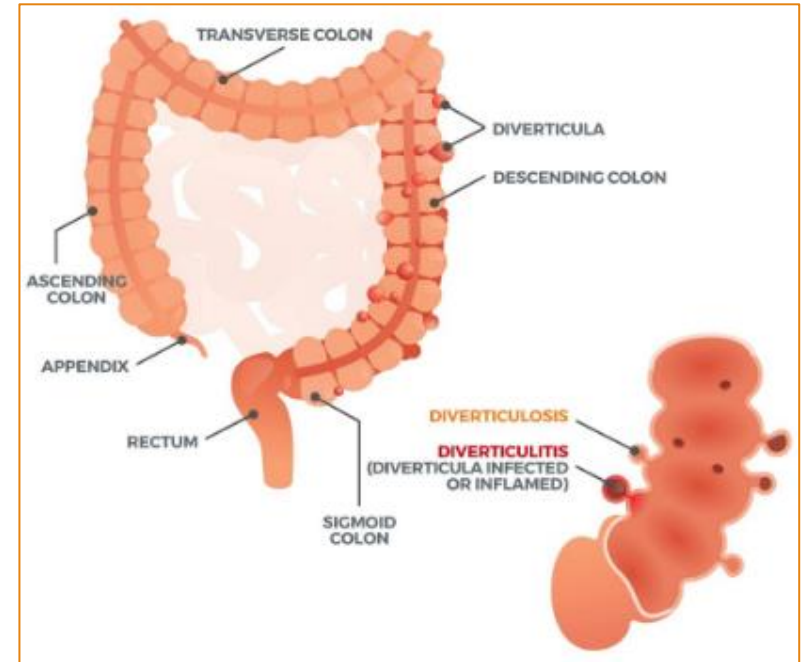
Diverticular Perforations

❑ **A diverticulum** is an abnormal pouch or sac that forms and protrudes from a hollow organ, such as the gastrointestinal tract

- The most common sites are the sigmoid and descending colon.
- Types include :
 - true diverticulum
 - false diverticulum (pseudo-diverticulum)

❑ **Diverticulitis** is the inflammation or infection of small pouches (diverticula) that can form in the walls of the colon.

- **Causes:**
 - Blockage of the diverticula by stool
 - Bacterial infection
 - Increased pressure within the colon



Diverticular Perforations (cont)

❑ **Diverticular perforation** occurs when small pouches (diverticula) in the colon become inflamed and rupture, leading to leakage of intestinal contents into the abdominal cavity.

❑ **Causes:**

- Diverticulitis
- Trauma to the colon
- Obstruction of the diverticulum

❑ **Pathophysiology:**

- Persistent diverticulosis with the presence of risk factors (like chronic constipation and advanced age) might lead to micro or macro perforation, which will eventually lead to the rupture of the perforated diverticula, causing leakage of the intestinal content into the peritoneal cavity, leading to peritonitis.

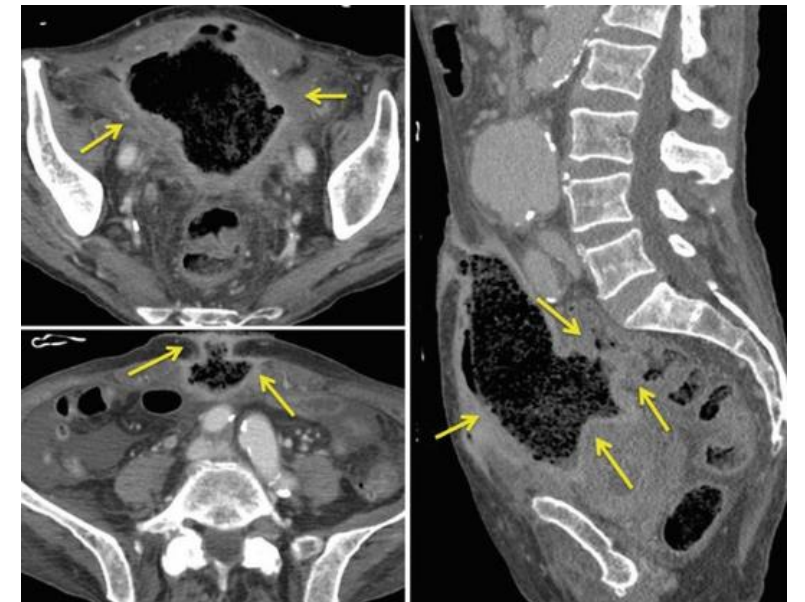
Diverticular Perforations (cont)

□ Clinical presentation:

- Severe abdominal pain, often sudden and localized to the **lower left quadrant**.
- Signs of peritonitis, such as a rigid abdomen, rebound tenderness, and guarding.
- Leukocytosis, indicating infection and coming with fever and chills, .
- Nausea and vomiting.
- Tachycardia and hypotension.

□ Management:

- Stabilization, checking vitals, giving IV fluids and antibiotics
- Imaging (x-ray or CT scan) to confirm perforation
 - CT scan is more sensitive for detecting extraluminal air and fluid collections
- Immediate surgical intervention
- Post operative management includes giving analgesics to relieve pain, and continuing on the antibiotics.



Gynecological conditions

Common conditions

1. Ectopic Pregnancy
2. Ovarian Torsion
3. Pelvic Inflammatory Disease (PID)
4. Ruptured Ovarian Cyst
5. Endometriosis
6. Fibroids

Ectopic pregnancy

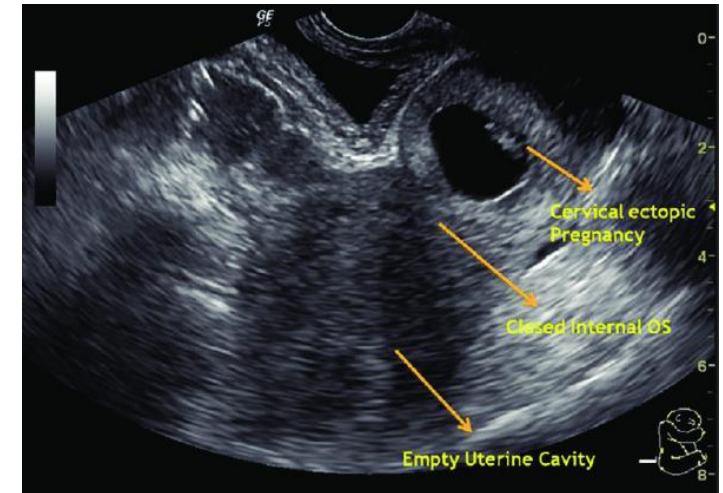
❑ An ectopic pregnancy occurs when a fertilized egg implants outside the uterine cavity, most commonly in the fallopian tube, as the embryo grows, it can cause rupture of the fallopian tube causing internal bleeding, which is lethal if not managed promptly.

- **Risk Factors:**

- History of Pelvic inflammatory disease (PID)
- Smoking
- Use of intrauterine devices (IUDs)
- Age over 35
- Tubal surgery

- **Management:**

- Methotrexate therapy for stable patients
- Surgical intervention (salpingectomy or salpingostomy) for unstable patients or those with contraindications to medical management
- Monitoring of beta-hCG levels



Ovarian torsion

- ❑ Ovarian torsion is the complete or partial rotation of the ovary on its ligamentous supports, leading to obstruction of its blood supply, which will lead to ischemia, prolonged ischemia can result in ovarian necrosis if not treated promptly.
- ❑ Risk factors:
 - Pregnancy
 - Enlarged ovaries
 - Ovarian cysts or masses
 - Polycystic ovarian syndrome (PCOS)
 - Hormonal treatments
 - Young age
- ❑ Management:
 - Diagnostic laparoscopy with detorsion to preserve ovarian function, drainage or cystectomy if cyst present, or oophorectomy if ovarian tissue is diffusely necrotic
 - Pain management

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*Thank
you*

