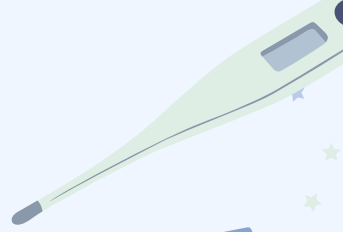


Abdominal pain

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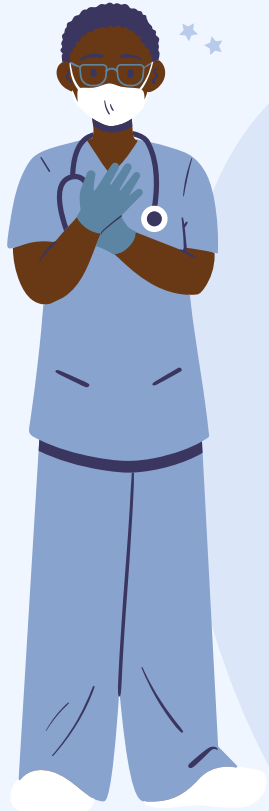


Objectives :

1. **Introduction**
2. **Intestinal Obstruction**
3. **Abdominal Aortic Aneurysm**
4. **Cholecystitis/Cholangitis**
5. **pancreatitis**
6. **Appendicitis**
7. **Mesenteric Ischemia**
8. **Gynaecologic Emergency (Ectopic Pregnancy, Ovarian Torsion)**

Introduction

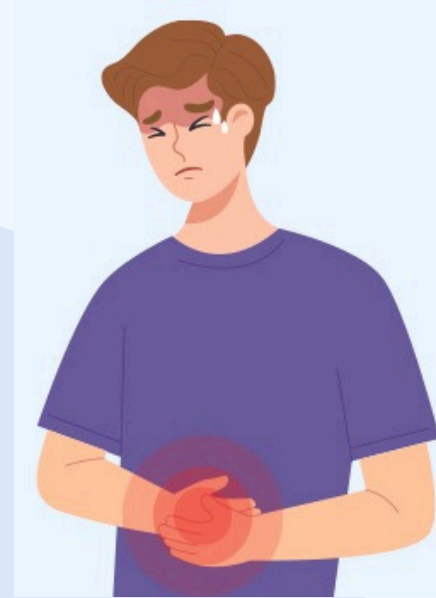
*ranging from benign to
life threat.



Abdominal pain is pain that you feel anywhere between your chest and groin

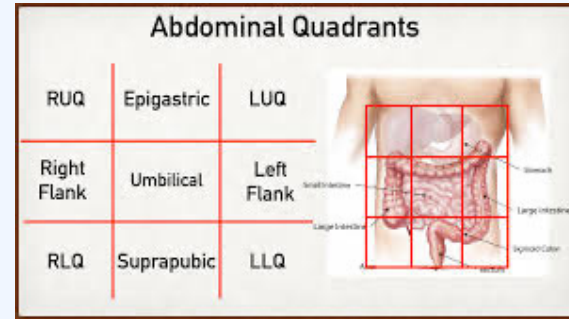
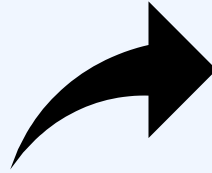
Clinicians have to determine which patients can be safely observed or treated symptomatically and which required further investigation or specialist referral

Accuracy of 1.history 2. physical examination 3.focused investigations
4.management have yield good results



1. History

- Location
- Character
- Radiation
- Exacerbating and relieving factors
- Associated symptoms
- Medical and surgical history



2. Physical Examination

Pain →

- vital sign: Most patient with surgical abdomen will have vital signs abnormalities secondary to pain ,inflammation ,fluid and electrolytes imbalance.
- General: hydration , mentation and nutritional status
 - Inspection, Palpation , Percussion and Auscultation.
 - cough tenderness
 - special sign
 - External hernia and male genitalia
 - Rectal and pelvic examination

3. Investigations

CBC

Electrolytes

Amylase, lipase

pregnancy hormone

Electrocardiogram (ECG) to rule out myocardial infarction (MI)

Liver function tests (LFTs) for right upper quadrant (RUQ) pain

β -hCG (human chorionic gonadotropin) for all women of childbearing age.

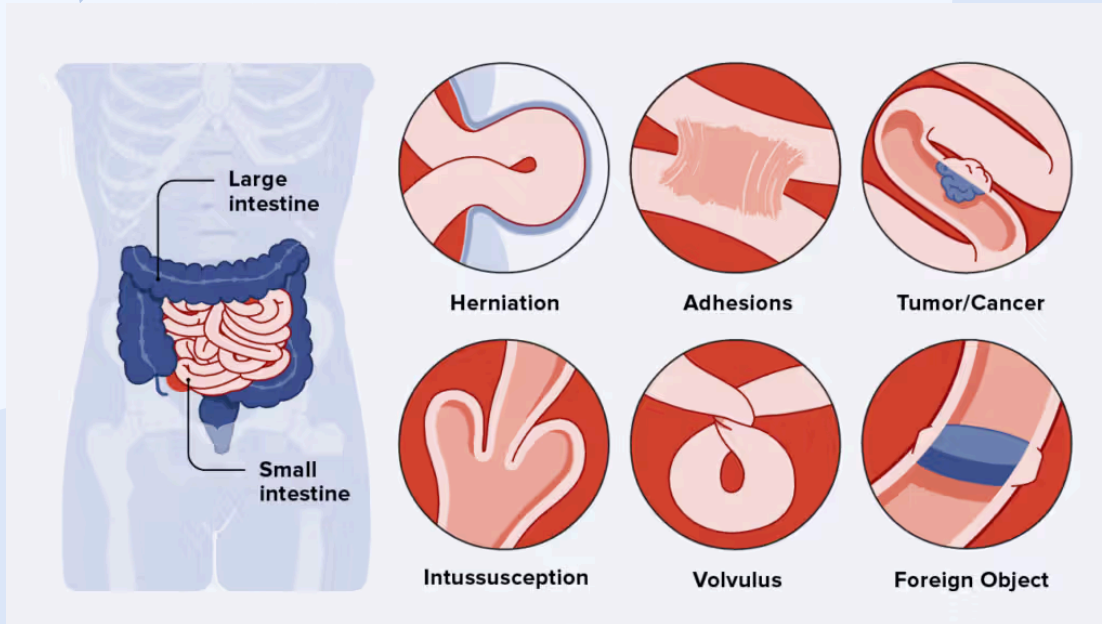
Chest x-ray (CXR) and abdominal x-ray (AXR) to look for free air (can detect as little as 1–2 mL); easier to see under right hemidiaphragm.

Abdominal computed tomography (CT) should be used after the above assessment is complete and the diagnosis remains elusive (e.g., young male with clinical signs and symptoms of appendicitis should not undergo CT).

4. Management

- **Early diagnosis improves outcome .**
- **Key is deciding whether surgical intervention is needed**

Intestinal Obstruction



Definition: Failure and arrest of distal downward propagation of the intestinal contents.



Classification According to :

1.intestinal movement :
Dynamic and Adynamic
obstruction.

2. Level:
a.High small intestinal obstruction:
duodenum or jejunum
low small intestinal: ileum
b. Large intestinal obstruction

3.pathological nature :
a. Simple mechanical obstruction
b. Strangulation
c. Paralytic ileus

4.clinical:
a. Acute
b. Chronic
c. Acute obstruction on top of
chronic.



ETIOLOGY

A. Adynamic obstruction

Paralysis of intestinal movements as in:

1. Paralytic ileus.
2. Acute mesenteric vascular occlusion.

B. Mechanical (dynamic) obstruction

1. **In the lumen:** F.B., hard faeces, gall stone ileus & mass of parasites.

2. **In the wall :** congenital , stricture of intestine ,neoplasm,Colorectal carcinoma is the commonest cause of Large intestine obstruction.

3. From outside:

- a. Adhesive obstruction is the commonest cause for small intestinal obstruction in adult .
 - b. Obstructed and strangulated hernia is the commonest cause for small intestinal obstruction in children.
- C. Compression or infiltration of intestine by any abdominal neoplasms.

Clinical pictures:

- Abdominal pain (expect in paralytic ileum), projectile vomiting , absolute constipation , distension.

Physical examination:

Palpation:

Abdominal mass (tumor or intussusception) ,

Tenderness , rebound tenderness , rigidity. (strangulation)

auscultation:

1) Loud exaggerated intestinal sounds in mechanical obstruction.

2) Dead silent abdomen in dynamic intestinal obstruction.

P-R examination: May show the cause of bstruction e.g, cancer rectum or faecal impaction.

Investigation:

1. Blood picture: Leukocytosis indicates strangulation.
2. Blood urea and electrolytes : show acidosis, hypokalaemia, hyponatraemia, rises of haematocrite.
3. Role's tube and suction.
4. Plain X-ray : Erect position : Fluid level
Supine position : to know the level of obstruction.
5. Barium enema.
6. Ultrasound.
7. CT with contrast.

Treatment

Surgery :

Indication :

- 1.Acute or acute on top of chronic mechanical obstruction.
2. Obstructed hernia or strangulated hernia
- 3.Strangulated intestine :

Laprotomy by lower right paramedical incision.

Explore the caecum:

Collapsed caecum - small intestinal obstruction.

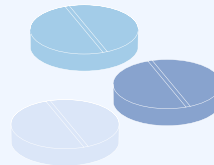
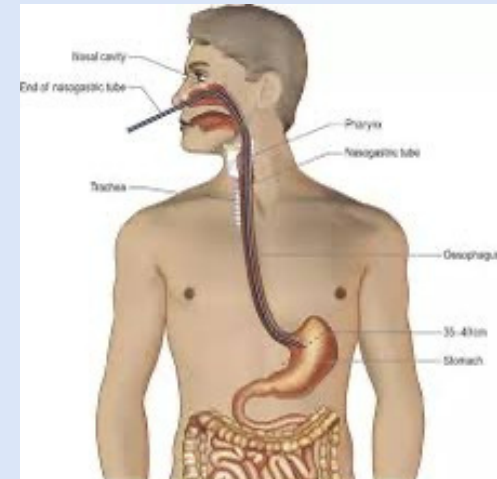
Distended caecum -> large intestinal obstruction.

Relieve the cause of obstruction.

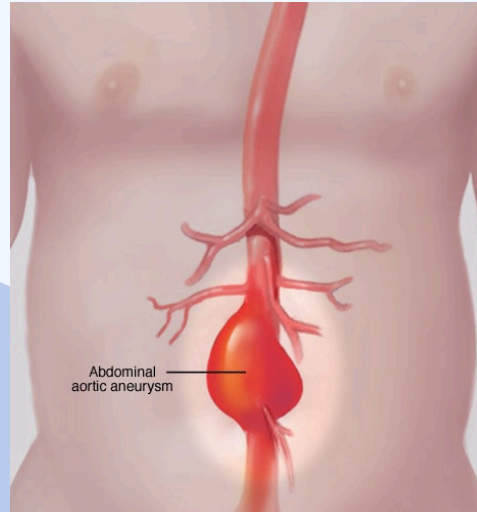


Pre-operative:

Rest, stop oral feeding, Gastrointestinal suction (Ryle tube) ,IV fluid, antibiotics, Foley catheter and observation.



Abdominal Aortic Aneurysm



Aneurysm: is abnormal dilation of localized segment of vessels may be due to:

- 1- weakness of wall of BV.
- 2- increase the pressure on the wall of BV.

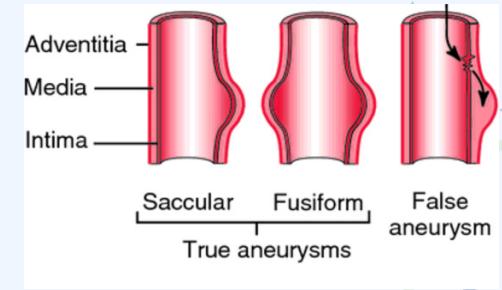
They can be either:

- - 1- True(involve 3 layers of arterial wall).
 - 2- False(involve single layer of fibrous tissue).

Aneurysms can be grouped according to their shape (fusiform) or to their •
etiology (atheromatous, traumatic, mycotic,etc....).

The aneurysms can be happen to any blood vessel in our body.

- AAA is the most common type of aneurysm and is found in 2% of •
population;95% have associated atheromatous degeneration and 95% occur
below the renal artery.



The exact cause of aneurysm is unknown, it occurs due to weakness in the wall of the artery.

May be secondary to atherosclerosis, infection and trauma.

•

Factors that can increase your risk of having this •
problem include:

- 1- Family history.
- 2- Atherosclerosis (hyperlipidemia).
- 3- HTN(uncontrolled).
- 4- Smoking.
- 5- Male(Five times more).
- 6- Advanced age.
- 7- Genetic factors (Marfan syndrome, Ehlers-Danlos syndrome).
- 8- Tertiary syphilis.

Presentation of AAA

90% of cases are incidental findings while 10% are symptomatic.

Asymptomatic cases are found on routine abdominal exam or while doing an ultrasound for another reason.

Symptoms are due to compression(ureter, duodenum and vena cava), thrombosis, or rupture (very dangerous).

Symptoms of thrombus depend on which vessel is occluded. An embolus lodged into interosseus or digital arteries can cause blue toes.

Rapid expansion or rupture of an AAA may cause severe pain (epigastric pain radiating to the back).

A ruptured AAA causes hypotension, tachycardia, profound anemia and sudden death.

The symptoms of rupture may mimic renal colic, diverticulosis and sever lower abdominal pain or testicular pain. Gradual erosion of the vertebral bodies may cause nonspecific back pain. The aneurysm may embolism distally.
Possible physical exam findings:

- 1- Many aneurysm of clinical significance can be palpable and typically an expansile pulsation is felt. Transmitted adjacent to a large artery may be mistaken for aneurysmal pulsation.
- 2- Abdominal tenderness.
- 3- Pulsatile abdominal mass.
- 4- Bruits can be heard

Ruptured of AAA

Abdominal aortic aneurysm can rupture anteriorly into peritoneal cavity(20 per cent) or posterolaterally into retro- peritoneal space (80 per cent)

Less than 50 per cent of patients with rupture survive to reach hospital

- Anterior rupture results in free bleeding into peritoneal cavity; very few patients reach hospital alive.
- Posterior rupture on other hand produces a retro- peritoneal hematoma.
 - Rupture is a surgical emergency.
- It may be appropriate to screen for AAA with US; a national screening program has recently started in England and offers and ultrasound scan to men in their 65th year.

Signs of rupture:

- Consists of a triad: 1- Abdominal pain 2- Pulsatile abdominal mass 3- Hypotension.
- The pain is severe. And can be persistent or intermittent.
- Decreasing Hematocrit
- Rupture into peritoneal cavity is rapidly fatal.
- Signs of heart failure
- A loud bruit.

Risk of rupture:

- Risk per year based on diameter:
- Less than 5cm= 4%
- 5 to 7 cm= 7%
- More than 7 cm= 20%
- Indications for surgery: 1- if the diameter is more than 5.5 cm.
- Rupture
- Rapid growth
- Embolization of plaque.

Investigation

Imagin:

1- US: confirm presence, location, size, monitor growth.

2- CT Angiogram: gold standard.

3- Duplex Ultrasound is the best tool for screening and to follow up clinically.

Other diagnosis:

- ECG: rules out MI.

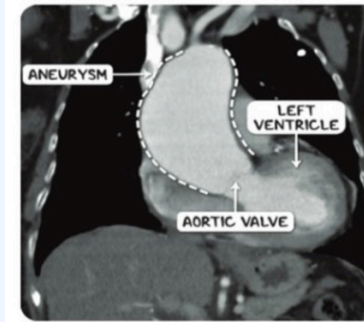


Figure 3.5 A CT scan of the chest in the coronal plane demonstrating a massive thoracic aortic aneurysm involving the ascending aorta. The aortic valve is faintly visible.

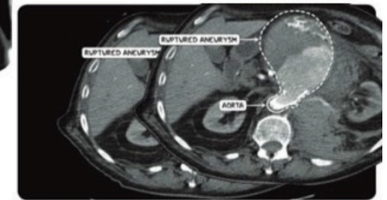
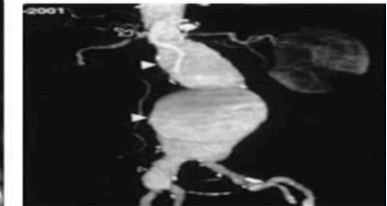


Figure 3.4 Abdominal CT scan in the axial plane demonstrating a ruptured abdominal aortic aneurysm.

Treatment

atment depends on the severity of an aneurysm may only need monitoring, while aneurysm that are too large or overgrowing need surgical repair.

Medically: decrease the risk factors.

Surgically:
open surgical procedure.

Endovascular aneurysmal repair.

Indication for surgery :

1- diameter >55mm.

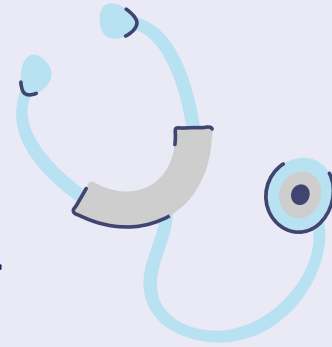
2- rupture.

3- rapid growth.

4- embolization of plaque.



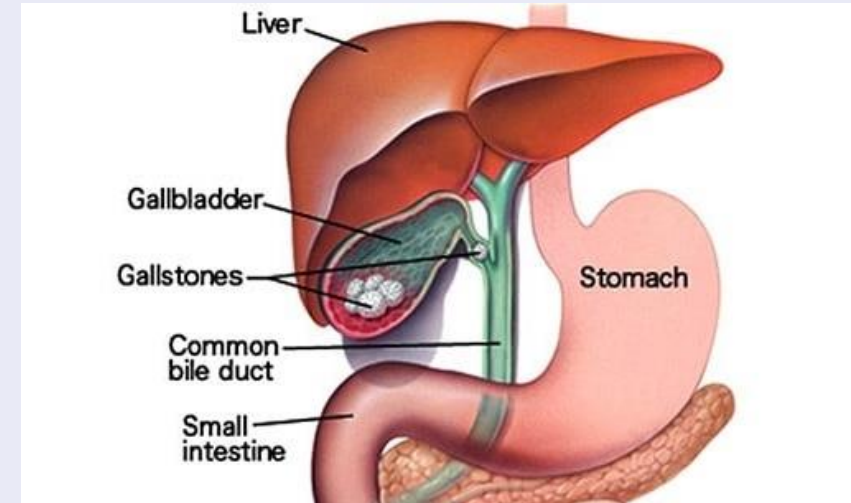
Cholecystitis/Cholangitis



Biliary tract emergencies most often result from obstruction of the gallbladder or biliary duct gall stones

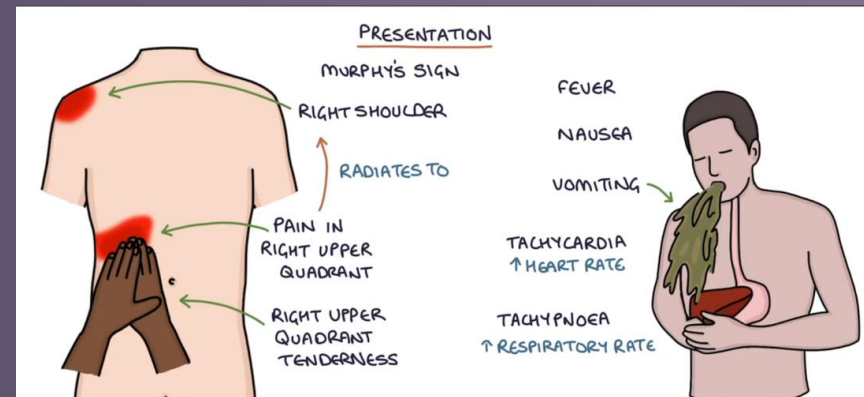
The most common biliary tract emergencies are :

- acute Cholystitis
- biliary colic
- acute (Ascending) cholangitis



Acute Cholecystitis: Inflammation of the gallbladder wall, usually due to obstruction of the cystic duct by gallstones.

- - Signs and symptoms :
- RUQ tenderness and guarding are present, usually or > 3 hours.
- Fever, nausea, vomiting, and anorexia are nonspecific and variable.
- Murphy's sign: (positive in about one third of patients).
- One third of patients develop exquisitely tender RUQ mass late in course.



Laboratory findings and Ultrasound

Lab Findings

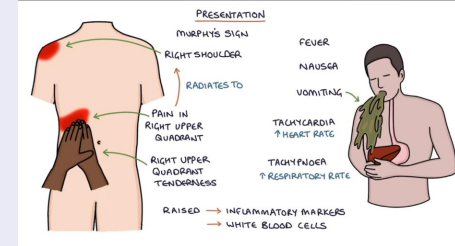
- Leucocytosis with or without increased alkaline , phosphatase ,LFTs, amylase, and total bilirubin.

Ultrasound

- Reveals inflammation of the gallbladder wall (> 4 mm).
- pericholecystic fluid and stones in the gallbladder.
- Positive predictive value of all three is 90%.
- dilation of the Common Bile Duct if a stone is lodged in CBD.

Management of Acute Cholecystitis

- **NPO.**
- **IV fluids.**
- **IV antibiotic (broad spectrum).**
- **IV analgesia.**
- **Cholecystectomy within 24–48 hours.**
- **laparoscopically; if inflammation prevents adequate visualization of important structures, convert to open cholecystectomy.**



Acalculous Cholecystitis

Acute cholecystitis without evidence of gallstones; thought to be due to biliary stasis and ischemia (low perfusion states).

- Risk factors:

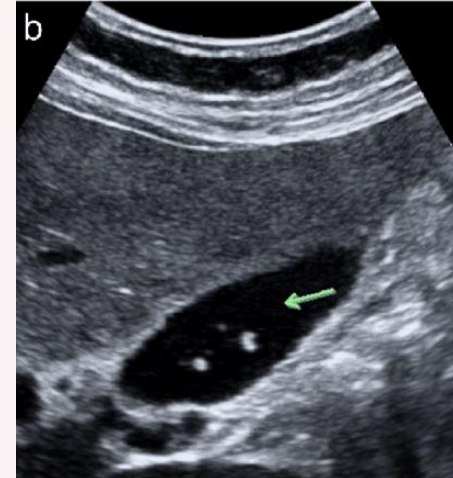
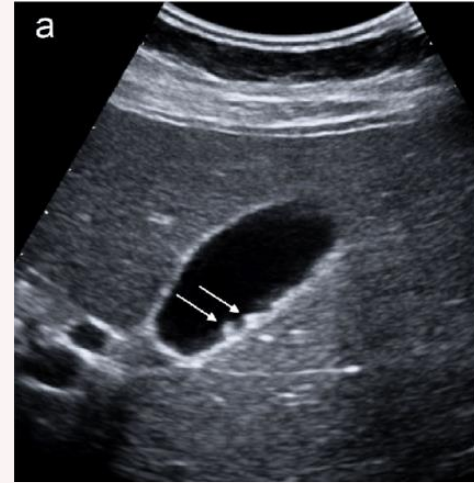
Most often seen in intensive care unit (ICU) patients with multiorgan system failure, trauma (especially after major surgery), burns, sepsis.

labs findings : same as calculous cholecystitis

Ultrasound: Biliary sludge and inflammation; can also be used to detect **complications** (e.g., gangrene, empyema, or perforation of the gallbladder).

- **Management:**

Urgent cholecystectomy.



Acute (ascending) Cholangitis

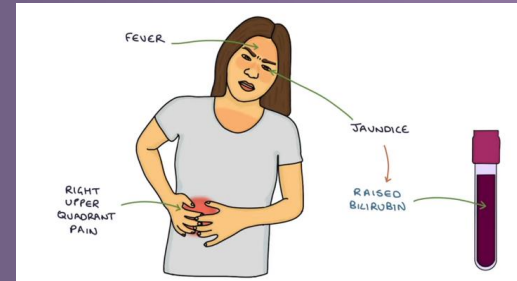
Bacterial infection of the bile ducts usually associated with obstruction of the CBD—gall stones (most common), strictures, or mass

- Signs and symptoms:

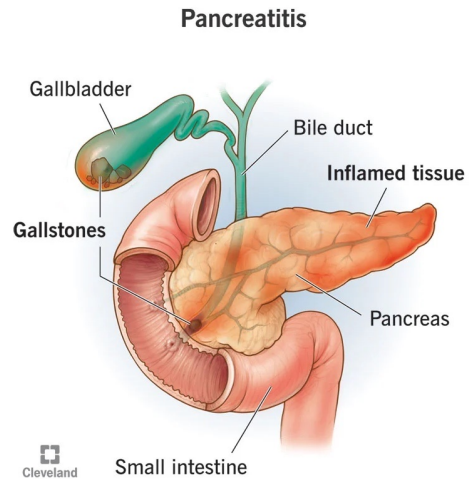
Charcot's triad: (RUQ pain, Fever, Jaundice). Reynolds pentad : (Charcot's triad plus Central nervous system (CNS) symptoms and Septic shock). Nausea, vomiting.

- Investigations:

- Labs: Leucocytosis with increased bilirubin , alkaline phosphatase and LFTs.
 - Ultrasound: Should be the initial study; dilation of common and intrahepatic bile ducts along with gallstones, and a thickened, oedematous gallbladder wall.
- CT scan with contrast or MRI/MRCP can be done—shows hyperemic wall of the CBD with ductal dilatation and cut-off point suggesting site of obstruction.
- Management: NPO, IV fluids, and broad spectrum IV antibiotics. Close monitoring in ICU



PANCREATITIS



Definition: Inflammation of pancreas.

Aetiology :

1. Migrating GB stoned.
2. Alchoho intake.
3. Trauma.
- 4.infection.
5. Vascularr insufficiency.
6. Rarely , autoimmune , hyperparathyrodism , corticosteroid.



Gallstones in the gallbladder.

Hypercalcemia

Gallstones

Clinical picture : 1. Fever ,vomiting , headache , anoraxia , malaise , tachycardia 2.Epigasric pain radiate to the back ,improved by sitting or leaning forward and aggravated by lying down.

an eating disorder that causes people to weigh less than is considered healthy for their age and height, usually by excessive weight loss

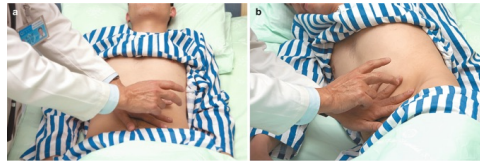
Physical examination:

refers to the pain that occurs when pressure applied to the abdomen is released.

1. Mild epigastric tenderness, rebound tenderness, rigidity & limitation of movements of abdominal wall with respiration.

2. Shifting dullness.

3. Reduced intestinal sounds.



4. retroperitoneal hematoma -> bluish discolouration in the flanks (Grey Turner's sign), around the umbilicus (Cullen's sign) or distal to inguinal ligament (Fox sign).

Complication. :

fluid loss

inflammation can cause significant fluid loss into the abdominal cavity due to increased vascular permeability

Nausea and Vomiting

1. Hypovolemic shock.

2. Tetany due to hypocalcaemia.

Fat Necrosis: In pancreatitis, the breakdown of fat tissue can release fatty acids, which bind to calcium in the bloodstream, forming insoluble calcium soaps. This process can lead to a decrease in free calcium levels, resulting in hypocalcemia.

3. Multiple organ failure.

4. Acute gastrointestinal stress ulcers and haemorrhage.

Pancreatitis can lead to acute gastrointestinal stress ulcers and hemorrhage through several interconnected mechanisms:

- 1 **Systemic Inflammatory Response:** The inflammation associated with pancreatitis can trigger a systemic inflammatory response, leading to increased production of stress hormones like catecholamines and cortisol. These hormones can reduce blood flow to the gastrointestinal (GI) mucosa, making it more susceptible to ulceration.
- 2 **Acid Secretion:** In pancreatitis, there may be alterations in gastric acid secretion. Increased acidity can damage the protective mucosal layer of the stomach and duodenum, leading to ulcer formation.

Investigation:

Lab

1. Serum lipase and amylase : elevated.
2. Serum calcium : reduced.
3. Leucocytosis. $\uparrow$ WBC
4. Hyperglycemia.

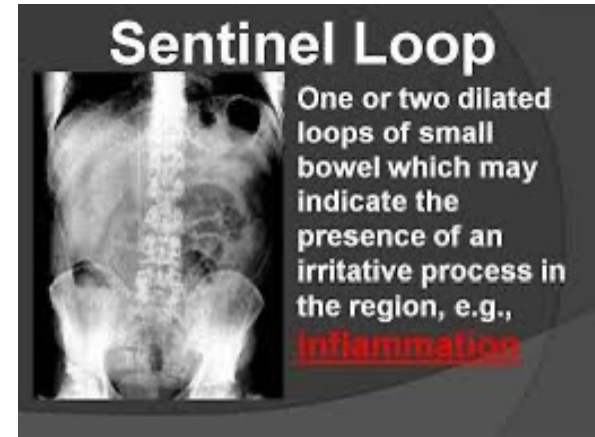
Pancreatitis can lead to hyperglycemia through several mechanisms:

- 1 **Damage to Insulin-Producing Cells:** The pancreas contains clusters of cells known as islets of Langerhans, which produce insulin. In pancreatitis, inflammation and damage to the pancreatic tissue can impair the function of these cells, reducing insulin secretion. Insufficient insulin leads to elevated blood glucose levels.

Radiology

1. CT scan with IV contrast (main investigation)
2. Abdominal U/ S.
3. x-ray: A) Dilated short segment of the small intestine (sentinel loop).
b) Distension of the transverse colon and collapse of the descending colon (colon cut - off sign).

4. MRCP. Magnetic resonance cholangiopancreatography
5. ERCP. Endoscopic retrograde cholangiopancreatography



. It describes a segment of bowel that becomes dilated and is often seen in imaging studies, such as X-rays or CT scans. This dilation can indicate underlying issues, such as:

- 1 **Obstruction:** A sentinel loop may form due to an obstruction in the intestines, where fluid and gas accumulate behind the blocked segment.
- 2 **Inflammation:** Conditions like pancreatitis can cause localized bowel changes, resulting in the formation of a sentinel loop near the inflamed area.
- 3 **Pathological Conditions:** It can be associated with other abdominal issues, such as diverticulitis or perforations.

Treatment “Seven R” :

1) conservative

Relief of pain , Replacement of the lost fluid (Ringer’s lactate , blood , plasma) ,
Rest , Respiratory
support by oxygen mask , endotracheal tube and mechanical ventilator) ,
Resistance of infection. (antibiotic), Reassessment (vital signs , urine output ,
blood PH , ...) , Removal of bile duct stones.

2) surgery. : laparotomy.

appendicitis



**It's the most common cause of acute abdomen,
more common in male , (15-30) years old**

PREDISPOSING FACTORS:

OBSTRUCTION: IT USUALLY DUE TO HARD FAECES, ADHESIONS, FB .

ANATOMICAL FACTORS: A NARROW LUMEN AND ITS WALL IS RICH IN LYMPHOID FOLLICLES.

DIET: HIGH PROTEIN AND LOW FIBRE DIET.

PATHOLOGY:

1) ACUTE OBSTRUCTIVE APPENDICITIS (MORE COMMON):

OBSTRUCTION OF THE LUMEN OF THE APPENDIX
» STASIS » OVERGROWTH OF NORMAL BACTERIAL FLORA » SPREAD
OF BACTERIA TO MUCOSA.

2) ACUTE NON OBSTRUCTIVE APPENDICITIS:

PRODUCE MILD SLOWLY PROGRESSIVE INFLAMMATION .



The signs and the symptoms

- 1- Acute abdominal pain
- 2- Anorexia
- 3- Nausea and vomiting
- 4- constipation (some time diarrhea may be present).

Examination

General examination:

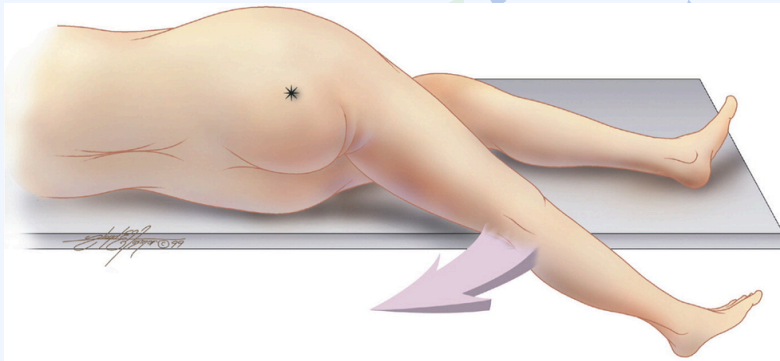
- 1) Temperature rises.
- 2) pulse (Tachycardia is slight).

Abdominal examination:

- 1) localized tenderness and rebound tenderness in the McBurney's point (which is the commonest site for the base of the appendix).
- 2) cough tenderness.
- 3) Rigidity and limitation of abdominal wall movement with respiration over the position of appendix, occurs in advanced stage with perforation and peritonitis.
- 4) Rovsing's sign: pressure on the left iliac fossa causes pain in the right iliac fossa.

Other signs:

Psoas sign : hyperextension to hip >
RIF pain



Obturator internus sign: flexion and
internal rotation of the right hip >
abdominal pain



diagnostic investigation



LABORATORY TESTS

1-Complete Blood Count (CBC):

Elevated white blood cell

(WBC count is a common finding in appendicitis.

Inflammation in the appendix triggers an immune response, leading to an increase in WBCs.

2-C-reactive Protein (CRP) and Erythrocyte Sedimentation Rate (ESR):

These are markers of inflammation that may be elevated in cases of appendicitis. While nonspecific, they can support the clinical suspicion

3-Urinalysis:

To rule out urinary tract infections and/or a kidney stone. These conditions can cause symptoms similar to appendicitis

IMAGING STUDIES

1-Ultrasound:

Ultrasound is often used in children and pregnant women due to its safety. It can help visualize the appendix and surrounding structures. However, its accuracy can be operator-dependent, and it may not provide clear images in some cases.

2-Computed Tomography (CT) Scan:

CT scans are highly effective in diagnosing appendicitis, with an overall sensitivity of 96%. They provide detailed images of the abdomen and can identify inflammation, swelling, or abscess formation in the appendix. CT scans are particularly valuable in cases where the diagnosis is unclear based on clinical symptoms and initial evaluation

3-MRI:

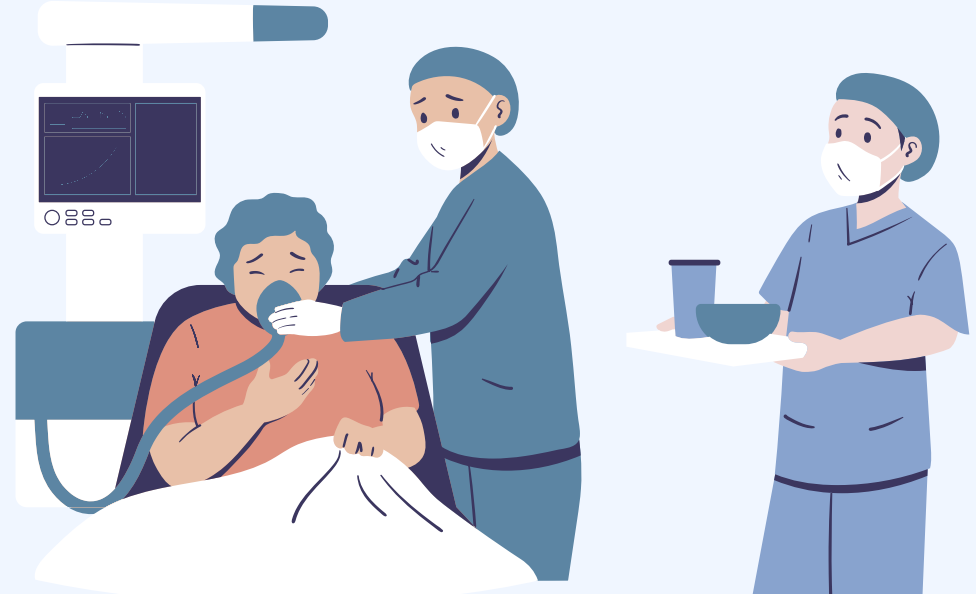
MRI can also be used to visualize the appendix and surrounding structures without exposing the patient to ionizing radiation. It is not as commonly used as CT scans but may be preferred in certain situations, such as in pregnant women.

Uncomplicated cases:
TTT is appendectomy (open or laproscopic)

Complicated cases:

- Peritonitis: urgent open appendectomy with systemic antibiotic.
- App.abscess: incision and drainage by open surgery,
- App.mass:conservative treatment (admission,NOP, I.V laparoscopic). interval appendectomy done 3-6 months later. f luid ,NGT ,I.V antibodies, observation of vital signs) then> interval appendectomy done 3 month later.

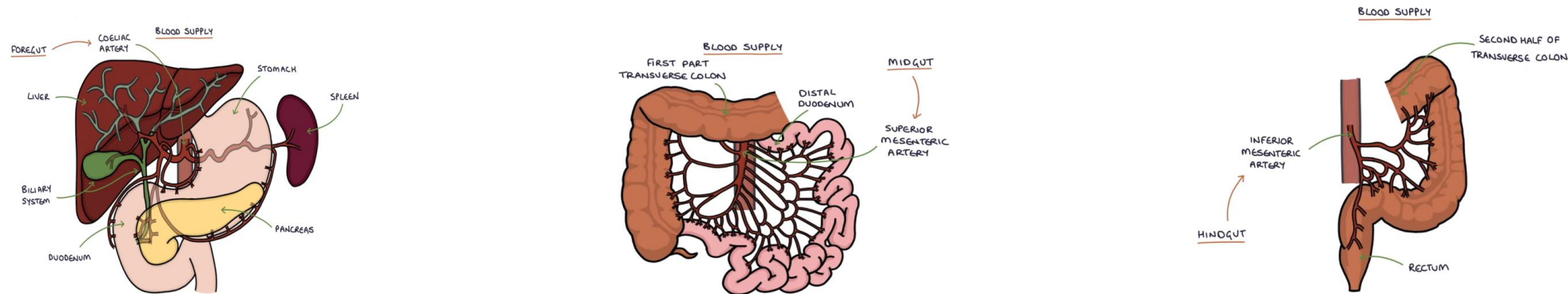
treatment



Mesenteric ischaemia is caused by a lack of blood flow through the mesenteric vessels supplying the intestines, resulting in intestinal ischaemia.

Blood Supply

There are three main branches of the abdominal aorta that supply the abdominal organs:



Coeliac artery

The foregut includes the stomach and part of the duodenum, biliary system, liver, pancreas and spleen.

- **superior mesenteric artery.**

- The midgut is from the distal part of the duodenum to the first half of the transverse colon.

- **inferior mesenteric artery.**

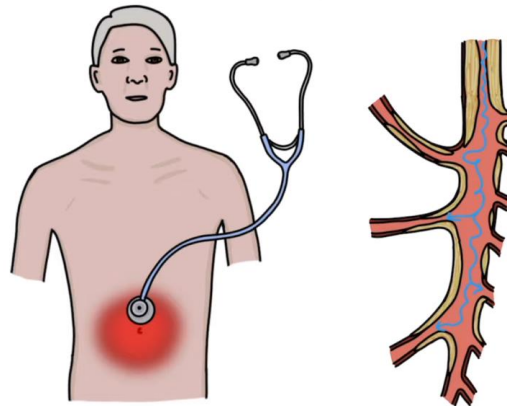
- The hindgut is from the second half of the transverse colon to the rectum

Chronic Mesenteric Ischaemia

Chronic mesenteric ischaemia (also known as **intestinal angina**) is the result of narrowing of the mesenteric blood vessels by atherosclerosis. This results in intermittent abdominal pain, when the blood supply cannot keep up with the demand. It is similar to the pathophysiology of angina, where the blood supply is reduced by coronary artery disease, resulting in intermittent symptoms.

The typical presentation is with a "classic triad" of:

- Central colicky **abdominal pain** after eating (starting around 30 minutes after eating and lasting 1-2 hours)
- **Weight loss** (due to food avoidance, as this causes pain)
- **Abdominal bruit** may be heard on auscultation



CHRONIC MESENTERIC ISCHAEMIA

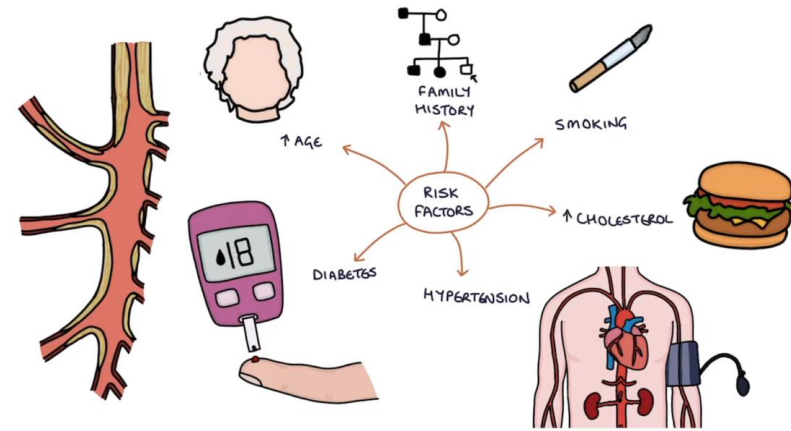
"INTESTINAL ANGINA"

CLASSICAL TRIAD

- CENTRAL COLICK ABDOMINAL PAIN AFTER EATING
 - ↳ 30 MINUTES AFTER EATING
 - ↳ LASTS 1-2 HOURS
- WEIGHT LOSS → FOOD AVOIDANCE
- ABDOMINAL BRUIT → AUSCULTATION
 - ↳ "WHOOSHING" OR "BLOWING" SOUND
 - ↳ TURBULENT BLOOD FLOW

Risk factors for chronic mesenteric ischaemia are the same as any other cardiovascular disease:

- Increased age
- Family history
- Smoking
- Diabetes
- Hypertension
- Raised cholesterol



Diagnosis is by **CT angiography**.

Management involves:

- Reducing **modifiable risk factors** (e.g., stop smoking)
- Secondary prevention** (e.g., statins and antiplatelet medications)
- Revascularisation** to improve the blood flow to the intestines , may be performed by:
 - Endovascular procedures* first-line (i.e. *percutaneous mesenteric artery stenting*)
 - Open surgery* (i.e endarterectomy, re-implantation or bypass grafting)

Acute Mesenteric Ischaemia

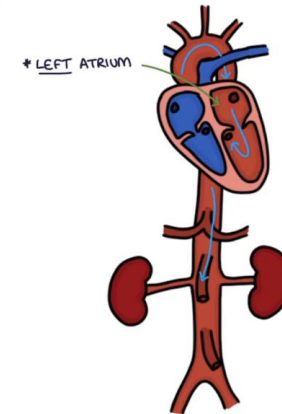
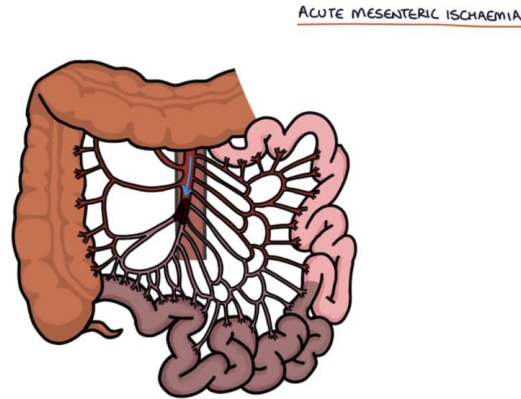
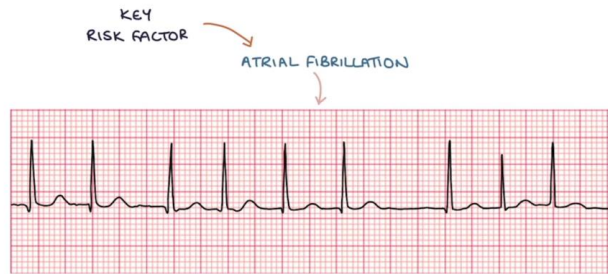
Acute mesenteric ischaemia is typically caused by a rapid blockage in blood flow through the superior mesenteric artery. This is usually caused by a **thrombus** (blood clot) stuck in the artery, blocking blood flow. The blood clot may be a **thrombus** that has developed inside the artery or an **embolus from** another site that has got stuck in the artery.

AMI can cause mucosal sloughing within 3 hours of onset and to intestinal infarction 6 hours after onset.

Risk factors:

- Cardiac: low cardiac output, cardiac arrhythmias, severe cardiac valvular disease, recent MI.
- Age.
- Atherosclerosis.
- Hypercoagulable states

A key risk factor is **atrial fibrillation**, where a **thrombus** forms in the **left atrium**, then mobilises (**thromboembolism**) down the aorta to the superior mesenteric artery, where it becomes stuck and cuts off the blood supply.



Acute mesenteric ischaemia presents with acute, non-specific abdominal pain. The pain is disproportionate to the examination findings. Patients can go on to develop shock, peritonitis and sepsis.

Over time, the ischaemia to the bowel will result in necrosis of the bowel tissue and perforation.

Contrast CT is the diagnostic test of choice, allowing the radiologist to assess both the bowel and the blood supply. Patients will have **metabolic acidosis** and **raised lactate** level due to ischaemia.

Patients require surgery to achieve two objectives:

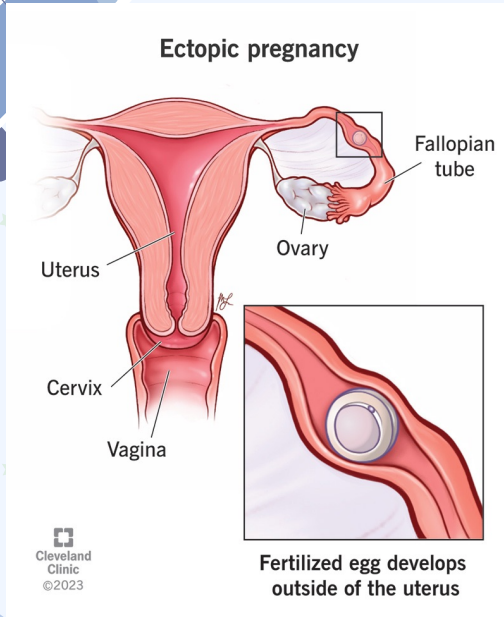
- Remove necrotic bowel
- Remove or bypass the thrombus in the blood vessel (open surgery or endovascular procedures may be used)

There is a very high mortality (over 50%) with acute mesenteric ischaemia.

Therapy:

- Stabilization of patient:
 1. Hemodynamic monitoring and fluid management.
 2. Correction of electrolytes abnormalities, acidosis.
 3. Broad spectrum antibiotics.
 4. Placement of nasogastric tube for gastric decompression.
 5. patient with peritoneal features: mid line laparotomy with assessment of intestinal viability
 6. For embolic causes: Intraoperative embolectomy
 7. For thrombosis: Bypass of the site of obstruction
 8. Therapy include intra arterial vasodilator (papaverine) or thrombolytic agents (streptokinase, urokinase, PA)
 9. Venous thrombosis requires immediate anticoagulant agent (heparin).

Gynaecological Emergencies



A 29-year-old woman presents to the emergency department with complaints of lower abdominal pain and vaginal spotting for the past 3 days. She describes the pain as sharp and primarily located on her right side. She mentions that her last menstrual period was about 7 weeks ago and that her cycles are usually regular. She has a history of pelvic inflammatory disease (PID) and is sexually active but has not been using contraception consistently.

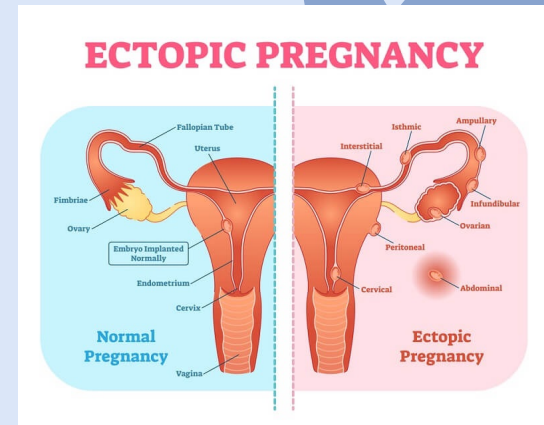
Ectopic Pregnancy

Ectopic Pregnancy: occurs when a fertilized egg implants and grows outside the main cavity of the uterus.

Types of Ectopic Pregnancy:

1. **Tubal Ectopic Pregnancy:** The most common type, where the embryo implants in the fallopian tube.
2. **Ovarian Ectopic Pregnancy:** Occurs when the embryo implants in the ovary.
3. **Cervical Ectopic Pregnancy:** Implantation in the cervix.
4. **Abdominal Ectopic Pregnancy:** Rarely, the embryo can implant in the abdominal cavity.

Other sites



Sign and symptoms

Early Symptoms: Similar to normal pregnancy, such as missed periods, breast tenderness, and nausea.

· Specific Symptoms:

- Abdominal or pelvic pain (often unilateral)
- Vaginal bleeding or spotting
- Dizziness or fainting (indicating potential rupture and internal bleeding)
- Shoulder pain (due to diaphragm irritation from internal bleeding)

On physical exam: Pallor, Slightly enlarged uterus, Cervical motion tenderness, Palpable adnexal mass.



An ectopic pregnancy is considered a medical emergency primarily when it leads to the following situations:

1. Rupture of the Ectopic Pregnancy:

- If the ectopic tissue grows large enough to rupture, it can cause significant internal bleeding. Symptoms of a ruptured ectopic pregnancy may include:

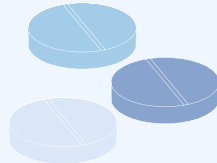
- Sudden and severe abdominal or pelvic pain ✓
- Heavy vaginal bleeding ✓
- Dizziness or fainting due to blood loss ✓
- Shoulder pain (referred pain from diaphragm irritation) ✓

2. Severe Internal Bleeding:

- A ruptured ectopic pregnancy can lead to hypovolemic shock, where the body loses a critical amount of blood, requiring immediate medical attention.

3. Acute Abdomen:

- If a patient presents with severe abdominal pain, especially with signs of peritonitis (tenderness, rigidity), it can indicate a ruptured ectopic pregnancy.



Investigation



While various tests, such as ultrasound and blood tests (measuring human chorionic gonadotropin - hCG levels), can aid in diagnosis, they might not always provide a clear indication, especially in the early stages.

A combination of clinical evaluation, imaging tests, and monitoring of hCG levels often aids in making an accurate diagnosis.

Timely detection and intervention are critical for managing ectopic pregnancies to prevent serious complications.



Treatment

Treatment:

1. Medical Management:

- **Methotrexate:** A medication that stops the growth of the ectopic tissue, used when the ectopic pregnancy is detected early and there is **no rupture**.

2. Surgical Management:

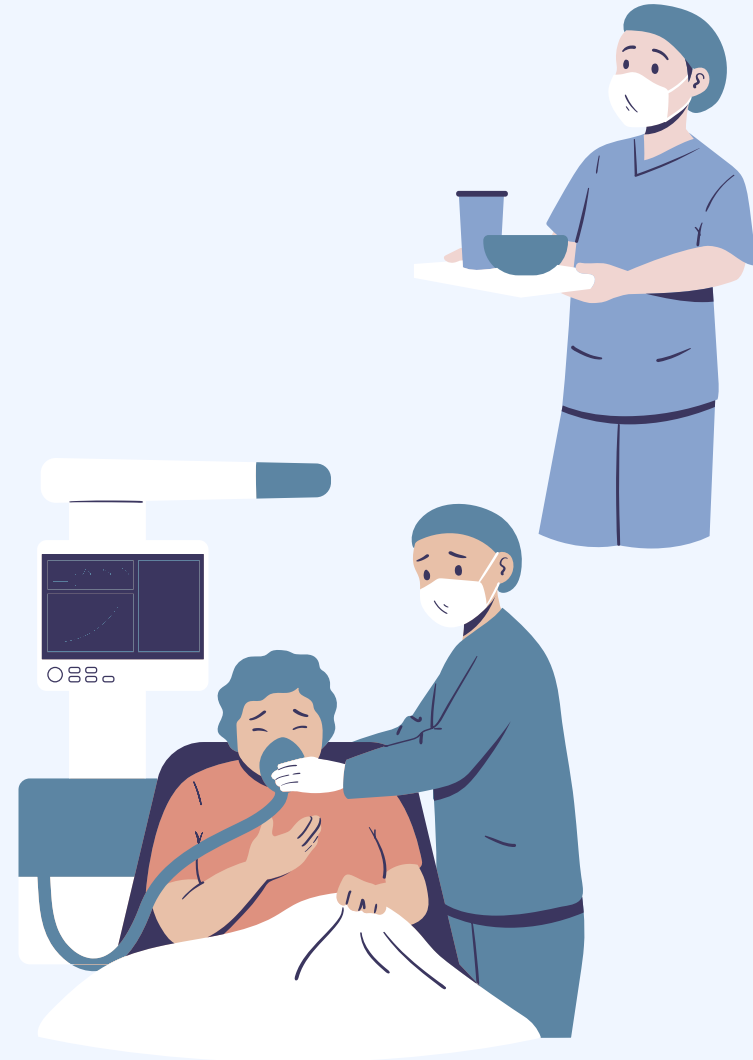
- **Laparoscopy:** The most common surgical approach, allowing for removal of the ectopic tissue while preserving the fallopian tube if possible.

- **Laparotomy:** A more invasive surgery may be necessary if there is significant internal bleeding or other complications.



Risk Factors:

- **Previous Ectopic Pregnancy:** A history increases the risk of recurrence.
- **Pelvic Inflammatory Disease (PID):** Infections
 - can damage the fallopian tubes.
- **Endometriosis:** Can affect the location of implantation.
- **Fertility Treatments:** Certain assisted reproductive technologies can increase risk.
- **Tubal Surgery:** Previous surgery on the fallopian tubes may predispose to ectopic pregnancy.



A 29-year-old woman presents to the emergency department with sudden, sharp, lower abdominal pain on her right side. She reports having missed her period for the past six weeks and has had mild vaginal spotting over the last two days. She also complains of nausea but denies any fever or urinary symptoms. Her medical history is unremarkable, though she mentions a history of chlamydia infection two years ago. On examination, her blood pressure is 100/60 mmHg, heart rate is 102 beats per minute, and she appears pale. A pregnancy test is positive, and transvaginal ultrasound shows no intrauterine pregnancy, but a mass is observed in the right adnexal region.

Question:

Based on the information provided, which is the most appropriate next step in management for this patient?

- A) Administer methotrexate and arrange for close follow-up.
- B) Prepare for immediate surgical intervention, such as laparoscopy.
- C) Repeat ultrasound in 48 hours to confirm the ectopic pregnancy.
- D) Observe and reassess her symptoms in 24 hours.

Ovarian Torsion

A condition occurring when the ovary or fallopian tubes twist on the tissues that support them.

- signs and symptoms: Sudden severe pelvic pain. Nausea , Vomiting.
- on physical exam: Asymmetrical ovaries/ adnexal mass. Abdominal/ pelvic tenderness.

Investigations:



Ultrasound with Doppler flow: Highly sensitive and specific in detecting · and ruling out ovarian torsion. Imaging early in the process may show congestion from venous outflow obstruction with preserved arterial flow.



CT with contrast.
MRI with contrast.

**Thank you for
your attention**

