



Round : Emergency medicine

Group no : B3

Done By : Inas wail

Abdominal pain

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

" DM patients could either present with DKA or hyperosmolar status depending on which type of DM they have.

DKA is observed in DM type 1 patients, mostly they're known cases of this disease or paediatric patients. Their glucose is often > 250. They present with ketonemia/ketonuria AND acidosis. If one of these isn't present then it is not a DKA. Give fluids 6-8 L push.

Hyperosmolar on the other hand occurs in patients with DM type 2. Their glucose level is > 600. Their level of consciousness is reduced. They're more dehydrated than patients with DKA and need at least 12 L of fluids to compensate. Need to check potassium levels, if high, treat with OUT insulin.

If potassium level is between (3-5) mg, give insulin along with fluids. 0.1ml per kg infusion by an insulin pump. Give antibiotics as high glucose increases the risk of infections. Most common causes of hyperosmolar is stress, starvation or a missed insulin dose.

In order to identify whether the patient has an acute renal failure or not we look at HB. if it is high, then that's an acute onset of renal failure. But if it was low, then it indicated a chronic case."

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 surgical history

2.Physical Examination -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

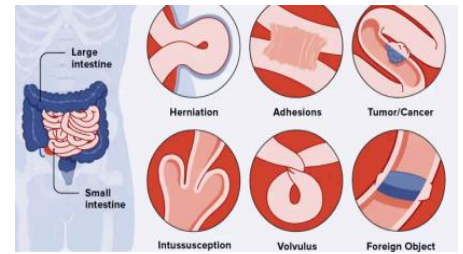
3.Investigations CBC Electrolytes Amylase, lipase Electrocardiogram (ECG) to rule out myocardial infarction (MI) Liver function tests (LFTs) for right upper quadrant (RUQ) pain β -hCG (human chorionic gonadotropin) for all women of childbearing age. Chest x-ray (CXR) and abdominal x-ray (AXR) to look 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

" Intestinal obstruction: Colicky abdominal pain is caused by peristaltic movement, so if it is absent then no colicky pain. Absolute constipation (Obstipation) no stool and no gas, whereas in constipation we don't have stool but we have gas. In mechanical, we have hyper sound but then it became absent. The opposite occurs with functional. The higher the obstruction the more the vomiting, the less the distention."



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.

Treatment : Surgery , Indication : 1.Acute or acute on top of chronic mechanical obstruction.

2. Obstructed hernia or strangulated hernia. 3.Strangulated intestine . Laparotomy 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.

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.

Abdominal Aortic Aneurysm

post CATH results in femoral pseudo-aneurysm most common site for aortic aneurysm is infra-renal. it's important to know the size to decide the management. Patients with connective tissue disorders have increased risk of having triple A as well as aortic dissection. screening for AAA is important for elderly individuals who have a smoking history. (using ultrasound which is very sensitive to screen and detect triple A, but it is insensitive to its complications/rapture) ☐ Grey turner sign and Cullen sign are signs of retroperitoneal hemorrhage.

could also be seen in acute hemorrhagic pancreatitis or adrenal gland hemorrhage. (so they're not sensitive nor specific to triple A) ☐ when the patient comes with the triad, he need to be administered to OR immediately because the patient is unstable. (same goes for acute surgical abdomen - in cases of board-like rigidity of the abdomen) Another management to triple A is to use an EVAR, it is less invasive and similar to CATH. but its uses are limited due to how expensive it is. surgical repair is also indicated when the expansion of the AAA exceeds 0.5cm every 6 months// 1cm per year.

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(Fife times more). 6- Advanced age. 7-Genetic factors (Marfan syndrome,EhlersDanols 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

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.

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.

Treatment 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

" Murphy's sign is positive when the patient ceases the inspiration when you palpate his RUQ area due to pain. Blood tests are done to rule out other disorders when someone comes with epigastric/RUQ pain. (Could also increase our suspicion) ☐
Ultrasound we would see the wall thickened >4 mm + double wall sign due to pericholecystic fluid (white black white) + and we can see the stone (its shadow) which is called wall acoustic shadow (wall echo shadow) Positive predictive value of Murphys sign is high but the negative predictive value is not high. ☐ Risk factors for biliary colic and cholecystitis (5F : female, fat, fertile, forty)
☐ When we have a huge stone at the neck of the gallbladder, which compressed the hepatic duct and results in jaundice. it is called Mirizzi syndrome"

Biliary tract emergencies most often result from obstruction of the gallbladder or biliary duct gall stones The most common biliary tract emergencies are : • acute Cholecystitis • 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 for > 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.

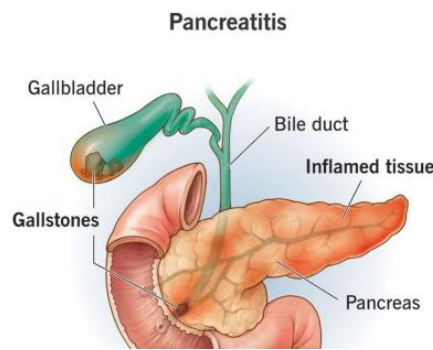
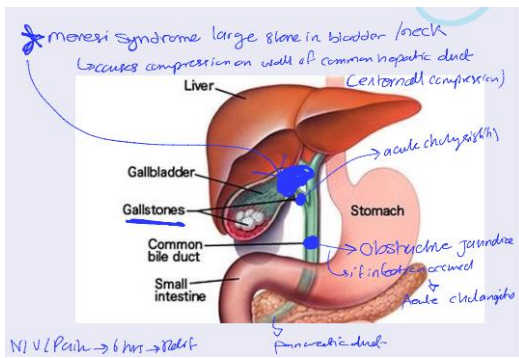
labs findings : same as calculous cholecystitis

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, edematous 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

"Biliary colic is two types (with stones (calculous biliary colic) or without) often it starts as biliary colic then progresses to acute cholecystitis and so on. ☐ in this case examinations shows no signs of inflammation + negative Murphy sign. but we could see impacted stone on ultrasound (see the wall acoustic shadow of it) often comes after the person has had a heavy meal which caused the gallbladder to contract pushing a (cholesterol based stone up which would get lodged at the narrowest point of the bladder (the neck) which causes pain. most often it would spontaneously resolve as the stone falls back down into the gallbladder. When the stone stays there and doesn't get down, and the pain stays for longer than 6 hours and inflammation around the stones occurs, signs of inflammation will become visible on ultrasound. and the patient could also develop fever. ☐ when the patient has Charcot's triad (jaundice, RUQ pain, fever) along with altered mental status/ confusion + shock which is then called reynold's pentad"



PANCREATITIS

the most common cause worldwide is alcohol. but here in our arab world it's biliary pancreatitis. second most common is due to hypertriglyceridemia I GET SMASHED (stands for the most common causes of acute pancreatitis) ☐ Handle bar injury is a high risk factor for acute pancreatitis (especially in pediatrics) Kidney function test, liver function test, along with CBC are required. kidney function test in order to check hydration and electrolytes. whereas liver function is important since if we have biliary pancreatitis, we will find high alkaline phosphatase and gamma GT (sometimes with obstructive jaundice) ☐ Lipase is more specific for acute pancreatitis. normal is 100-110 but in cases of acute pancreatitis it should be at least 3 times higher than normal. ☐ Gold standard is CT with IV contrast (swelling and signs of inflammation along with complications)

Definition: Inflammation of pancreas. Aetiology : 1. Migrating GB stoned. 2. Alcohol intake. 3. Trauma. 4. infection. 5. Vascular insufficiency. 6. Rarely , autoimmune , hyperparathyroidism Hypercalcemia Gallstones , corticosteroid.

Clinical picture : 1. Fever ,vomiting , headache , anoraxia , malaise , tachycardia 2. Epigastric pain radiate to the back ,improved by sitting or leaning forward and aggravated by lying down. Physical examination: 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 discoloration in the flanks (Grey Turner's sign), around the umbilicus (Cullen's sign) or distal to inguinal ligament (Fox sign).

Complication. : 1. Hypovolemic shock. 2. Tetany due to hypocalcaemia. 3. Multiple organ failure. 4. Acute gastrointestinal stress ulcers and hemorrhage.

Investigation: Lab 1. Serum lipase and amylase : elevated. 2. Serum calcium : reduced. 3. Leucocytosis. 4. Hyperglycemia.

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. 5. ERCP.

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

"the most important indicative sign is the shifting pain. ☐ the gold standard is CT with IV contrast. but we have many other options. but ultrasound is enough and good especially for pediatric age group.



It's the most common cause of acute abdomen, more common in male , (11-

29) 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 FIBRES 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 OBSTRUCTION APPENDICITIS: PRODUCE MILD SLOWLY PROGRESSIVE INFLAMMATION

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

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.

Psoas sign : hyperextension to hip > RIF pain ,, Obturator internus sign: flexion and internal rotation of the right hip > abdominal pain ,sign if positive indicated that the appendix is close to the psoas muscle. While obturator sign indicates that the appendix is more pelvic

Duphny sign could be done by asking the patient to cough, which causes irritation of the peritoneum.

Markle sign is done by asking the patient to stand on their toes then stand normally again (like if they jumped) and that would provoke pain.

Investigation labs

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 a 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 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.

Treatment Uncomplicated cases: TTT is appendectomy (open or laparoscopic)

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

Ischemia

" Acute mesenteric ischemia could occur due to a thrombus that Chronic is diagnosed by exclusion. and it often occurs due to atherosclerosis that involves multiple arteries Vasospasm is a cause of acute ischemia and it occurs in patients taking cocaine or norepinephrine for a long period of time Venous obstruction like in cases of hepatomegaly ☐ The most common site for an embolism is the superior mesenteric artery embolism. and the most important site for ischemia ☐ Severe abdominal pain out of proportion to the physical examination is the typical presentation of a patient with mesenteric ischemia. ☐ Lactate is high in patients with mesenteric ischemia due to lack of perfusion so cells shift to anaerobic like any patient with sepsis . ☐ MI, Hemorrhage, Sepsis and dehydration increase lactate. WBCs are higher than 20000 in cases of mesenteric ischemia. Death rate without treatment is almost 100%, but with treatment it reaches 25%. it is very hard to diagnose and treat and often it is always delayed Treatment includes NPO, analgesia, antibiotics IV and IV fluids as well as anti-coagulant (heparin) unless we are gonna administer the patient

to OR to prevent massive bleeding. gold standard CT angio/ CT with IV contrast Chronic mesenteric ischemia it is called intestinal angina (when the patient eats, the demand increases for blood and thus results in pain) Intestinal angina and mesenteric ischemia can be caused by heart failure as well as hypovolemia"

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:

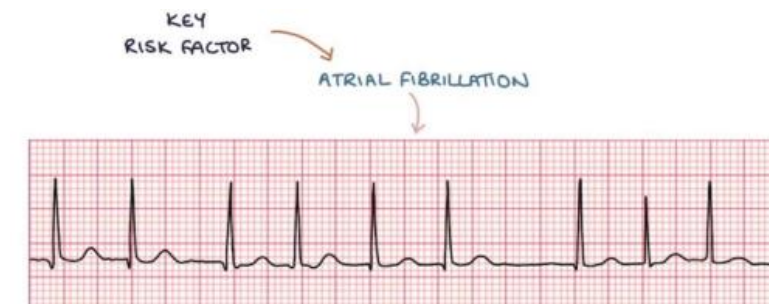
1. Coeliac artery The foregut includes the stomach and part of the duodenum, biliary system, liver, pancreas and spleen.
2. •superior mesenteric artery. •The midgut is from the distal part of the duodenum to the first half of the transverse colon.
3. •inferior mesenteric artery. •The hindgut is from 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

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 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 cardiacvalvular disease, recent MI. • Age. • Atherosclerosis. • Hyper coagulable 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).

In a patient with a ruptured oesophagus which could result from violent vomiting, we look for signs of Boerhaave triad: a crushing heart sound during systole, subcutaneous emphysema and chest pain.

Treatment of hypoglycaemia is called the rule of 5. Treatment of hyperkalemia is the rule of 10. (not working/acidosis then dialysis)

Causes of no urine output could either be: pre-renal (dehydration, hypovolemic shock, renal artery stenosis/closure) Intra-renal (kidney cancer, renal failure, polycystic kidney disease) Post-renal (stones and cancers) We need to introduce a Foley catheter and slowly drain the urine to avoid the rupture of the bladder. After the first foley and drainage we can examine the new formed urine afterward and take its appearance into consideration.

Causes of constipation could be indicated by ABD: A for adhesions (post operative mainly) B for bulging (hernia and strangulation) C for cancer

If abscess is suspected we should not do a surgical incision or we would cause sepsis. The patient often has fever, presents with onset of 3-5 days of abdominal pain and the mass itself could appear yellowish on the skin. In cases of hernia strangulation, we need to reduce the hernia before 6 hours has passed or necrosis has occurred and we need a surgery.

Gynaecological Emergencies

" management in cases of ectopic pregnancy actually starts with stabilizing the patient with ABC, then do laparoscopy which is both diagnostic and therapeutic. if the patient was stable, we could use another treatment (terminating pregnancy with methotrexate) ,, but if the patient is unstable we can perform a salpingectomy (removal of the tube and the pregnancy) vs salpingotomy (incision and removal of the pregnancy from the tube then stitching) ectopic pregnancy starts with abdominal pain then bleeding, whereas miscarriage starts with bleeding then abdominal pain. In cases of ovarian torsion, the female comes to the clinic with severe vomiting (more than once) along with abdominal pain. Treatment of ovarian torsion starts with ABC, give analgesia (NSAIDS + opioids), then if stable perform a laparoscopy to uncoil the twisted ovary. if there's a cyst or mass we should resect it as it increases the risk of twisting again. If the ovary is necrotic, remove the ovary too"

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.

Signs 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.

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.