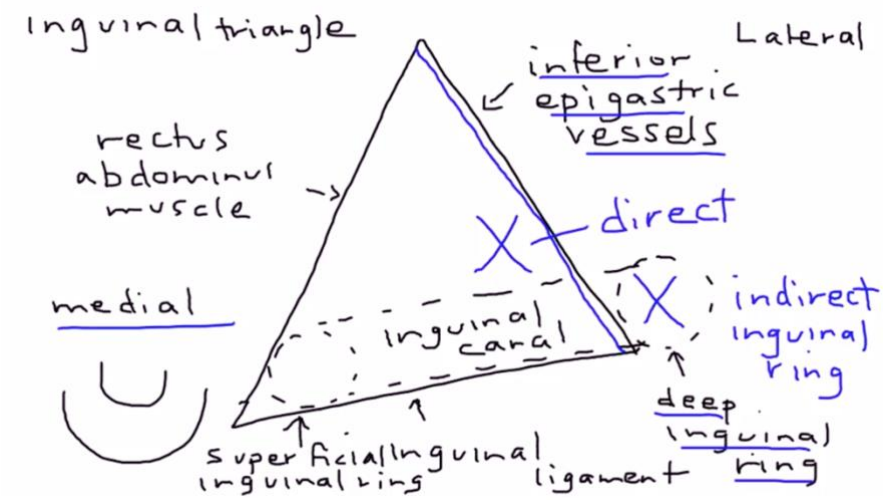
Inguinal hernia:



- **Boundaries of Hesselbach's Triangle**
  - Medial: Rectus abdominis
  - Lateral: Inferior epigastric vessels
  - Inferior: Inguinal ligament

- **Contents of the inguinal canal:** Spermatic cord (round ligament) + Ilioinguinal nerve

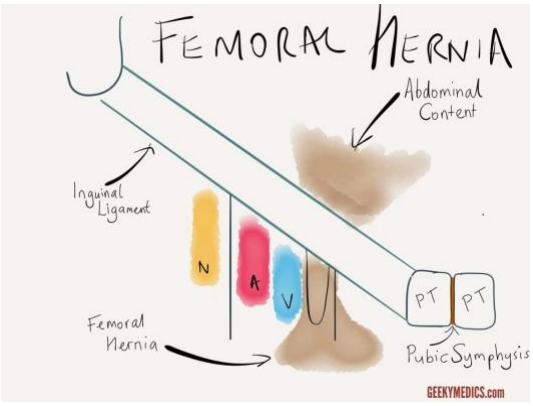
- **Direct** inguinal hernia is **medial** to the **inferior epigastric artery** while **indirect** is **lateral**

- **Inguinal** hernias are **ABOVE** and medial to the pubic tubercle while **femoral** hernias are **BELOW** and lateral

- A small indirect inguinal hernia could be above and lateral to the PT

- **Inguinal** hernias has **impulse** on coughing

- **Femoral** hernias are usually **irreducible** (due to narrow femoral canal) and cough impulse rarely detectable



- Only **indirect inguinal** hernias can extend into the **scrotum**

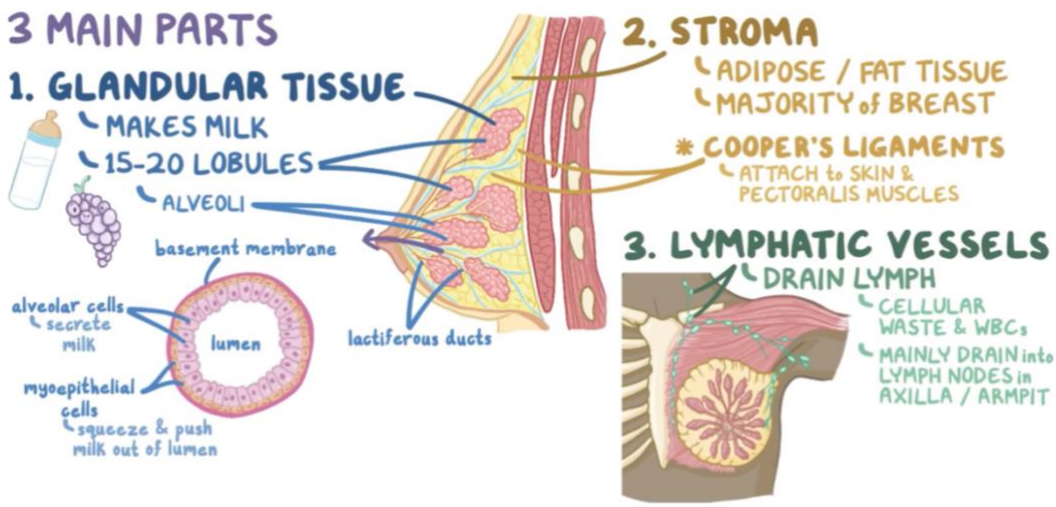
- **Incarcerated:** fixed to the wall, **Strangulated:** obstructed bl. supply

- **Femoral hernia:** (NAV**Y** VAN)

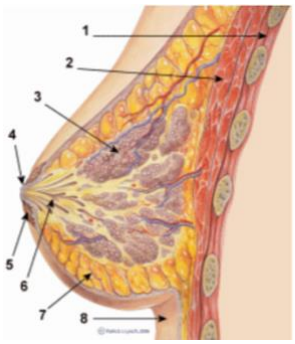
- Groin hernias:

	Direct inguinal hernia	Indirect inguinal hernia	Femoral hernia
Risk of strangulation	Low risk of strangulation	Low risk of strangulation	**<u>High risk of strangulation</u>**
Age	Seen in adults	May occur in **<u>infants</u>**	Seen in adults
Gender	Much more common in males	Much more common in males	More common in **<u>females</u>**

Breast anatomy



Breast cancer



1. Chest wall
2. Pectoralis muscles
3. Lobules
4. Nipple
5. Areola
6. Milk duct
7. Fatty tissue
8. Skin

- **Invasive ductal carcinoma**. This is the most common type of breast cancer. been renamed '**No Special Type (NST)**'. Other types are classified as 'Special Type'
- **Invasive lobular carcinoma**
- **Ductal carcinoma-in-situ (DCIS)**
- **Lobular carcinoma-in-situ (LCIS)**

Predisposing factors

- **BRCA1**, **BRCA2** genes - 40% lifetime risk of breast/ovarian cancer
- **1st** degree relative **premenopausal** relative with breast cancer (e.g. mother)
- **Nulliparity**, **1st pregnancy > 30 years** (twice risk of women having 1st child < 25 years)
- **Early menarche**, **late menopause** (risk increases with more menstrual cycles as breast undergoes division and apoptosis, that increases the risk of genetic mutation and tumor formation)
- **Combined hormone replacement therapy** (relative risk increase * 1.023/year of use), **COCP**
- Past breast cancer
- Not breastfeeding
- Ionizing radiation
- p53 gene mutations
- Obesity
- Previous surgery for benign disease (more follow-up, scar hides lump)

Decreased risk
- Early pregnancy
- Longer time breastfeeding

Management

1) **Surgery:** Around two-thirds of tumors can be removed with a wide-local excision.

Mastectomy	Wide Local Excision
• Multifocal tumor	• Solitary lesion
• Central tumor	• Peripheral tumor
• Large lesion in small breast	• Small lesion in large breast
• DCIS > 4cm	• DCIS < 4cm

2) **Radiotherapy:** to reduce recurrence.
3) **Hormonal therapy:** when tumor cells have hormone receptors, it blocks the effects of the hormones such as estrogen. **Tamoxifen** in pre-menopausal, in post-menopausal, **aromatase inhibitors** such as anastrozole (side-effects of tamoxifen include an increased risk of endometrial cancer, venous thromboembolism and menopausal symptoms)
4) **Biological therapy: Trastuzumab**, useful for HER-2 positive. Noting that it cannot be used in cardiac patients
5) **Chemotherapy**

Histopathological findings in different breast lesions

Breast cancer (invasive intraductal)	• Invasive ductal carcinoma extending to the epithelium
Paget's disease of the breast	• In situ carcinoma involving the nipple epidermis
Fibroadenoma	• Well-circumscribed lump with clear margins and separate from the surrounding fatty tissue, there's overgrowth of fibrous and glandular tissue
FibroadenoCIS	• Fibrosis + epitheliosis with cystic formation
Fibrocystic changes of the breast	• Cystic formation with mild epithelial hyperplasia in ducts

Core biopsy = tru-cut biopsy
Sentinel LN biopsy is done for staging

Breast cancer screening

- Women aged **50-70** years are offered mammogram **every 3 years**
- In high risk group, mammogram would be offered **annually** from ages **40-69**

Triple assessment of the breast

1. Clinical
2. Radiology
   - <35 → **USG**
   - >35 → **Mammogram**
3. FNAC

- **USG** is used in young patients instead of mammogram due to increased tissue density which reduces sensitivity and specificity of a mammography

- There're **four** instances in which **prophylactic mastectomy** is advised:
  1. Strong family history of breast cancer
  2. Presence of gene mutations (BRCA1 or BRCA2)
  3. Previous cancer in one breast
  4. Biopsies showing lobular carcinoma in situ and\or atypical hyperplasia of the skin

- Remember, prophylactic bilateral mastectomies and prophylactic bilateral oophorectomies are offered in cases in which patients has a strong family history and has genetic markers for the cancer

Axillary lymph node clearance

Indications

- SLNB
- Invasive breast cancer

Common complications

- **Numbness** around the scar and upper arm (can be permanent)
- **Lymphoedema** (localized fluid retention and tissue swelling caused by a compromised lymphatic system)
- **Seroma** (fluid collection at the site of operation)
- Frozen shoulders

Breast disorders

Disorder	Features
Fibroadenoma	• **< 30** years • Often described as **'breast mice'** as they are firm, discrete, non-tender, highly mobile lumps
FibroadenoCIS (fibrocystic disease) (Benign mammary dysplasia)	• **Middle**-aged women • **Lumpy breasts** which may be **painful** • Symptoms may worsen **prior** to menstruation
Breast cancer	• **Hard**, **irregular** lump • There may be associated **nipple inversion** or **skin tethering**
Paget's disease of the breast	• **Chronic eczematous changes** (itching – erythema – scales – blood stained nipple discharge – inverted nipple) • Usually **unilateral** • Diagnosed by **punch biopsy**
Duct ectasia	• Dilatation of the large breast ducts • Most common around the menopause • May present with **a tender lump around the areola** • **Green or brown** nipple discharge • **Nipple retraction** • Associated with **smoking**
Duct papilloma	• Hyperplastic lesions rather than malignant or premalignant • Most common cause of **blood-stained nipple discharge** • There could be skin changes
Breast abscess	• More common in **lactating** women • **Unilateral, red**, **hot tender** and **fluctuant** swelling • May present with purulent nipple discharge
Fat necrosis	• More common in **obese** women • May follow trivial or unnoticed **trauma** • **Firm & solitary localized lump and usually painless** • Skin around the lump maybe **red, bruised or dimpled** • Rare and may mimic breast cancer so further investigation is always warranted
Ductal fistula	• Suggested by **para-areolar discharge** • May follow abscess drainage or incision, there may be history of a spontaneous rupture of inflammatory mass preceding the fistula • Managed by excision under antibiotic cover • Recurrence is common

- *Lipomas and sebaceous cysts may also develop around the breast tissue*
- *fibroadeno**CIS** is **CYS**tic and **CYC**lical*

Haemorrhoids

- Haemorrhoidal tissue is part of the normal anatomy which contributes to anal continence. These mucosal vascular cushions are found in the left lateral, right posterior and right anterior portions of the anal canal (3 o'clock, 7'o'clock and 11 o'clock respectively). Haemorrhoids are said to exist when they become **enlarged**, **congested** and **symptomatic**

Features

- **Painless rectal bleeding** → *the most common symptom*
- **Pruritus**
- **Pain**: intermittent and usually not significant unless piles are thrombosed
- **Soiling** may occur with third- or fourth-degree piles

Types

External

- Originate below the dentate line (lower 1/3 of the anal canal)
- Prone to thrombosis, may be painful

Internal

- Originate above the dentate line (upper 2/3)
- Do not generally cause pain

Proctalgia fugax

- Severe recurrent rectal shooting pain in the absence of any rectal disease
- Usually occurs at night, after bowl action or following ejaculation
- Anxiety is an associated feature

Grading of internal haemorrhoids:

Grade I	Do not prolapse out of the anal canal
Grade II	Prolapse on defecation but reduce spontaneously
Grade III	Can be manually reduced
Grade IV	Cannot be reduced

Management:

- Soften stools → increase dietary **fiber** and **fluid** intake
- To alleviate symptoms → **topical local anesthetics** and **steroids** may be used
- Outpatient treatments → **rubber band ligation** is superior to injection sclerotherapy
- **Surgery** → reserved for *large symptomatic haemorrhoids which do not respond to outpatient treatments*
- Newer treatments: Doppler guided hemorrhoidal artery ligation, stapled haemorrhoidopexy

Acutely thrombosed external haemorrhoids

- typically present with **significant pain**
- examination reveals a purplish, edematous, tender subcutaneous **perianal mass**
- if patient presents within 72 hours → referral should be considered for ***excision***
- Otherwise patients can usually be managed **conservatively** with stool softeners, ice packs and analgesia
- Symptoms usually settle within 10 days

Anal fissure

- **Exquisite pain** with defecation **FRESH blood streaks** covering the stools
- The fear of pain is so intense they avoid bowel movements and get **constipation**
- They refuse PR exam → PR done under anesthesia
- Acute: <6 weeks, chronic > 6 weeks

- ***Anal fistula****: if low-submucosal or simple* → ***Lay open*** *(fistulotomy), if complex/high (cross internal and external sphincters)* → ***Seton suture*** *(ligation of fistula tract)*
- *Complex fistulas can NOT be laid open as it could result in fecal incontinence*

Pancreatic cancer

- 60% are **adenocarcinoma** that occurs at the **head** of the pancreas.

Risk factors

- Smoking
- Alcohol is an indirect RF as it causes chronic pancreatitis and liver cirrhosis
- Diabetes
- Chronic pancreatitis

Features

- **Head: -** Obstructive jaundice → Dark urine, pale stool, pruritis.
- Maybe painless although 70% are associated with **epigastric** or LUQ pain **radiating to the back**.
- **Body or Tail:** Epigastric or LUQ pain radiating to the back, relieved by sitting forward
- **Both:** Anorexia, weight loss or atypical weight loss
- Migratory thrombophlebitis (**Trousseau sign**): felt as small lumps under the skin

Investigations

- **CA19-9** → *non specific*
- Transabdominal **US**
- **CT**

Management

- **Whipple's resection** (Pancreaticoduodenectomy): considered when no metastasis.
  - Side-effects → **dumping syndrome** (a group of symptoms, including weakness, abdominal discomfort, and sometimes abnormally rapid bowel evacuation, occurring after meals in some patients who have undergone gastric surgery) and **peptic ulcer disease**
- ERCP with stenting for palliation

Cholangiocarcinoma

- Rare cancer of the bile duct

Features

- Jaundice
- **RUQ** pain
- Weight loss

Bowel cancer screening

- Men and women aged 60-74 years old are sent a self-administered kit **every 2 years**
- **Fecal immunological test (FIT)** → self-administer kit that can be can be sent via the post
- One-off bowel scope test at 55 years

There are 3 screening programs in the UK → Breast, Ovarian and Bowel cancer

Abdominal pain

Condition	Characteristic exam feature
Peptic ulcer disease	• **Duodenal ulcers** → more common than gastric ulcers, epigastric pain relieved by eating • **Gastric ulcers** → epigastric pain worsened by eating • Features of upper gastrointestinal hemorrhage may be seen (hematemesis, melena etc.)
Appendicitis	• Pain **initial in the central** abdomen, then **right iliac fossa** • **Anorexia** is common • Tachycardia, low-grade pyrexia, tenderness in RIF • **McBurney sign** → rebound tenderness at McBurney point • **Rovsing's sign** → more pain in RIF than LIF when palpating LIF
Acute pancreatitis	• Usually due to **gallstones** or **alcohol** • Severe **epigastric** pain • **Vomiting** is common • Examination may reveal tenderness, ileus and low-grade fever • Periumbilical discoloration (**Cullen's sign**) and flank discoloration (Grey-Turner's sign)
Biliary colic (4F)	• **RUQ** radiates to the **right shoulder** or the back and interscapular region • May be following a fatty meal. Slight misnomer as the pain may persist for hours • **Obstructive jaundice** may cause pale stools and dark urine • It is sometimes taught that patients are female, forties, fat and fair • Managed as acute cholecystitis
Acute cholecystitis	• History of gallstones symptoms (see above) • Continuous RUQ pain. • Jaundice is NOT usually present with cholecystitis • **Fever, raised inflammatory markers and white cells** • Murphy's sign positive (arrest of inspiration on palpation of the RUQ) • US → thick-walled, shrunken gallbladder • TTT → nil by mouth – analgesics (morphine) – IV fluids – antibiotics • Surgery → **Laparoscopic cholecystectomy** is usually indicated if patient is fit, if perforated GB → Open surgery
Diverticulitis	• Colicky pain typically in the **LLQ** • Fever, raised inflammatory markers and white cells
Abdominal aortic aneurysm	• **Severe central** abdominal pain **radiating to the back** • Presentation may be catastrophic (e.g. Sudden collapse) or sub-acute (persistent severe central abdominal pain with developing shock) • Patients may have a history of cardiovascular disease
Intestinal obstruction	• History of malignancy/previous operations • Vomiting • Not opened bowels recently • 'Tinkling' bowel sounds

Management of biliary colic (when stones occlude the cystic duct)**:**

1. Analgesia
2. Nil by mouth
3. Rehydrate
4. Elective laparoscopic cholecystectomy is usually indicated

- Complications of tonsillectomy:

- **Intraoperative**
  - Hemorrhage → replace the loss
  - Dental trauma
- **Postoperative**
  - Reactive bleeding (during 24hours post-op) → explore + replace the loss
  - 2ry bleeding (up to 7days post-op) → admission + IV antibiotics
  - Temporary dysphagia.

- 2ry hemorrhage is caused by necrosis of the blood vessels related to a previous repair, often precipitated by **wound infection.** The best step is **admission** and **IV antibiotics.**

Thyroglossal cyst:

- Asymptomatic fluid-filled **midline** neck mass below the level of hyoid bone
- Most often in children and adolescents
- Most common cause of midline masses in children → accounts for 75% of midline masses in children

How to diagnose?

1. **US neck:** to distinguish between solid and fluid-filled cyst → *It can confirm the diagnosis*
2. MRI & CT: when malignancy is suspected\Large cyst
3. Thyroid scan with tc-99m: to determine if there's ectopic thyroid tissue
4. FNAC

- **In elective/planned operations:**

- **Hb < 10 g/l** → investigate and postpone
- **Hb < 8 g/l** → transfusion

- **In emergency operations:**

- **Hb < 10 g/l** → proceed
- **Hb < 8 g/l** → transfusion and stabilize before proceeding

- Post-op hypovolemia and oliguria can be caused by:

- Hemorrhage
- Adrenal cortex and posterior pituitary response to stress which release **aldosterone** and **ADH** respectively

- if the patient developed post-op hypotension and subsequent oliguria, it can be corrected by **fluid challenge**

- **Fluid challenge**:

- Rapid (up to 15 mins) administration of 500 ml crystalloid (normal saline/Hartmann's)
- Immediate reassessment, if there's still evidence of hypovolemia → administer a further bolus of 250-500 ml of a crystalloid

- **post-op oliguria:**

- Normotensive → recheck the catheter
- Hypotensive = intra-abdominal bleeding → IV fluids

Carpal tunnel syndrome is caused by compression of **median nerve** in the carpal tunnel

History

- pain/pins and needles in thumb, index, middle finger
- unusually the symptoms may 'ascend' proximally
- patient shakes his hand to obtain relief, classically at night

Examination

- **weakness** of thumb abduction (abductor pollicis brevis)
- **wasting** of thenar eminence (NOT hypothenar)
- Tinel's sign: tapping causes paresthesia
- Phalen's sign: flexion of wrist causes symptoms

Causes

- idiopathic
- pregnancy
- edema e.g. heart failure
- lunate fracture
- rheumatoid arthritis

Electrophysiology

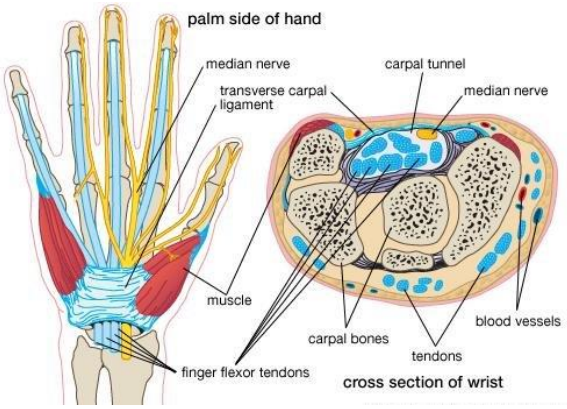
- motor + sensory: **prolongation** of the action potential

Treatment

- corticosteroid injection
- wrist splints at night
- surgical decompression (**flexor retinaculum \ transverse carpal ligament \ anterior annular ligament**)

De Quervain's tenosynovitis

- Also called "Washerwoman sprain", "Mummy thumb" or "Gamer's Thumb"
- Caused by inflammation of **the extensor pollicis previs** and **the abductor pollicis longus** due to repetitive stress injury
- Commonly occurs at in women following pregnancy due to the way in which the baby is lifted and held



After any GI surgery, there are 3 main concerns:

1. **Anastomotic leaks** are defined as 'a leak of luminal contents from a surgical join between two hollow viscera'
   - **RF** → immunosuppressed, corticosteroids, smoking, diabetes, peritoneal contamination, rectal anastomosis
   - **C/P** → abdominal pain and fever, typically 5-7 days post-operatively
   - **Definitive investigation** → CT with contrast
   - **Management** → bowel rest (NBM), IV antibiotics and IV fluid. Minor leaks maybe managed through observation and bowl rest alone with drainage if needed while exploratory laparotomy if a major leak
   - **Complication** → peritonitis where there's severe generalized abdominal pain with generalized guarding and rigidity
2. **Post-op bleeding**
   - reactive bleeding (during 24hours post-op)
   - 2ry bleeding (up to 7days post-op)
3. **Surgical site infection and subsequent sepsis**

- Hot tip: if the patient present 10 days after bowel surgery with abdominal pain, it's most likely **anastomotic leak**

- Most common post-op complication is **INFECTION**

- It's better to remove the catheter post-op in **24-48h** using **TWOC** procedure. Reinsert again if
1) PVRVs is **300-500ml with discomfort, voiding problems or feeling of fullness** 2) PVRVs **>500ml**

- PVRV is measure by 'bladder scan'

Perianal hematoma (external thrombosed hematoma)	Perianal abscess
➢ Acute pain + Bluish/purple in color ➢ tender peri-anal lump near the anal verge ➢ History of straining ➢ TTT: - Analgesics, stool softeners - Incision and drainage	➢ Red and tender + Throbbing pain (worsens when sitting down). ➢ Usually with low immunity/Diabetes/Crohn's ➢ Can be associated with constipation ➢ TTT: - Incision and drainage - Antibiotics

- Antibiotic prophylaxis (IV) in colonic surgery should be given at the time of **induction of anesthesia** or within the first 30 mins of the first excision:

- **Cefuroxime**: to cover gram -ve and +ve.
- **Metronidazole**: against anaerobic bacteria.

Esophageal atresia:

- **Prenatal signs** → Polyhydramnios, small stomach, **absent** fetal stomach bubble detected on **US**
- **Postnatal signs** → Cough, airway obstruction, secretions, blowing bubbles, distended abdomen, cyanosis, aspiration. Inability to pass a catheter into the stomach → X-ray show it coiled in the esophagus

- **Duodenal atresia:** X-ray show **double bubble** sign (stomach & duodenum).

- **Gastroschisis** and **exomphalos** are two rare birth defects that cause a baby to be born with some of their internal organs extending out of the body through a hole in the belly

exomphalos	gastroschisis
hole in belly button	hole next to belly button
intestines covered by protective sac	intestines not covered by a protective sac

Gastric carcinoma

- **C/P:** non-specific as vomiting, tiredness, weight loss, abdominal pain and anemia
- **RF:** - Aging
  - H. pylori infection
  - Blood group A
  - Gastric adenomatous polyp
  - Pernicious anemia
  - Smoking
  - Diet: salty, spicy, nitrates

Enlarged right supraclavicular LNs:
- Lung cancer
- Esophageal cancer
- Hodgkin's lymphoma

- **Signs suggesting incurability:**
  - **Troisier's sign**: enlarged left supraclavicular lymph nodes (Virchow's LN)
  - epigastric mass
  - hepatomegaly
  - jaundice
  - ascites

Pancoast tumor

- *Tumor of the pulmonary apex, on top of the right or left lung*
- *Spreads to nearby tissues like ribs and vertebrae*
- *Most are NSCLC*

Paralytic ileus: cessation of GI motility

- **Causes:**
  - prolonged surgery, exposure and handling of the bowel
  - peritonitis and abdominal trauma
  - electrolyte disturbance
  - anticholinergics and opiates
  - immobilization

- **Absent** bowl movements + **NO** pain → **Paralytic ileus**
- **Exaggerated** bowl sounds + **pain** → **Mechanical obstruction**

- **Clinical picture:**
  - nausea, vomiting
  - abdominal distension
  - absent bowel sounds
- **Imaging: Abdominal x-ray** to show air/fluid filled loops of small and/or large bowel
- **Management: (Drip & Suck)**
  - NG tube to empty the stomach from fluid & gas when the patient is nauseated or vomiting
  - IV fluid
  - Maintain electrolyte balance
  - Reduce opiates and analgesia
  - Encourage the patient to mobilize
  - **Lactulose** or **erythromycin** can stimulate bowl movement

Diverticulitis: inflammation of the diverticulum, common in >50yrs and low fiber intake

- **C/P:**
  - Rapid onset of LIF pain and tenderness
  - Nausea and vomiting
  - Bloating and constipation
  - Diarrhea
  - Features of infection: fever, tachycardia, raised WBCs and high CRP (>50 mg/L)
  - If perforated → guarding and rigidity

- All patients with diverticular disease who are symptomatic or hemodynamically unstable require **urgent admission**
- Colonoscopy is contraindicated in acute diverticulitis
- **Intussusception:** pain is non-specific and intermittent

- **Investigations:** CT abdomen and pelvis
- **Treatment:**
  - IV Antibiotics + IV Fluids
  - Increase dietary fiber intake
- **Complications:** Massive rectal bleeding that requires admission.

- Diverticulum (plural diverticula): herniation of the large colon
- Diverticulosis: the presence of asymptomatic diverticula
- Diverticular disease: symptomatic diverticula
- Diverticulitis: inflammation of the diverticula

- Hot tip: Diverticulitis is a left-side appendicitis

Sigmoid volvulus: torsion of the colon around its mesenteric axis resulting in compromised blood flow and closed loop obstruction

- Usually an elderly man with chronic constipation
- **C/P:** patient suddenly develops a classic picture of painful intestinal obstruction:
  - abdominal distension
  - vomiting (classically with no nausea?)
  - pain
  - absolute constipation
- **Investigation:** X-ray shows a coffee bean sign (omega sign)
- **Management:** rectal tube decompression, laparotomy and resection

Colorectal cancer

- **Rt-sided** colon cancer > Anemia, **Lt-sided** colon cancer > Obstructive symptoms
- Rt-sided colon cancer (cecum, ascending colon) tend to be **exophytic** so it rarely causes obstruction of feces
- Old + changing bowel habits + bleeding PR + single ulcer = **Colorectal cancer** until proven otherwise
- Diagnosed by **colonoscopy with biopsy**, barium enema, CT scan

Rectal location

- PR bleeding. Deep red on the surface of stools.
- Change in bowel habit. Difficulty with defecation, sensation of incomplete evacuation, and painful defecation

Descending-sigmoid location

- PR bleeding. Typically dark red
- Change in bowel habit

Right-sided location

- Iron deficiency anaemia may be the only elective presentation
- Weight loss
- Mass in right iliac fossa
- Disease more likely to be advanced at presentation

Emergency presentations

Up to 40% of colorectal carcinomas will present as emergencies.

- Large bowel obstruction (colicky pain, bloating, bowels not open)
- Perforation with peritonitis
- Acute PR bleeding

- *CEA is NOT for diagnosis however it's useful for monitoring*
- *Anemia is not evident with left sided cancer because:*
  1. *Bleeding is noticed as fresh blood with stool, cancer cecum is **far away**, it won't be presented with fresh blood*
  2. *Right colon is **wider** than left colon → obstruction is more prominent with the left side, let alone its **exophytic** nature*
- ***Krukenberg Tumor:** bilateral ovarian malignancy due to metastasis from GIT cancer (most commonly gastric carcinoma)*
- *Risk factors for colon cancer → 1- **Age**. 2- **Family history**. 3- **Smoking**.*

Pleomorphic adenoma (benign mixed tumor)**:**

- most common salivary gland tumor
- **Parotid** > submandibular > sublingual
- **Painless + slowly growing**
- **Firm**, single, nodular mass and usually mobile
- Benign and can become malignant
- Treated by superficial parotidectomy or enucleation

Adenolymphoma (Warthin's tumor)	- mobile, soft, cystic mass and usually painless
Mikulicz's disease	- bilateral swelling of all salivary glands - welling of lacrimal glands resulting into narrowing of palpebral fissure
Parotiditis	- pain especially when eating - fever, redness, swelling
Frey's syndrome	- excessive sweating on cheeks when eating instead of salivation - due to nerve damage as a parotid surgery complication

Common tumor markers:

Tumour marker	Association
CA 125	Ovarian cancer
CA 19-9	Pancreatic cancer
CA 15-3	Breast cancer
Prostate specific antigen (PSA)	Prostatic carcinoma
Carcinoembryonic antigen (CEA)	Colorectal cancer
Alpha-fetoprotein (AFP)	Hepatocellular carcinoma, teratoma

Seminoma > LDH

- **MRCP** is an alternative to diagnostic **ERCP** for imaging the biliary tree and investigating biliary obstruction. A major feature of **MRCP** is that it is not a therapeutic procedure, while in contrast **ERCP** is used for both diagnosis and treatment.

- **MRCP** is used when **US** cannot detect CBD stones while the duct is dilated and/or LFT are abnormal.

Oropharyngeal carcinoma:

- Typical old patient, smoker
- Persistent sore throat
- A lump in the mouth or throat
- Referred otalgia
- Difficulty swallowing or moving mouth or jaw
- Unexplained weight loss

Mesenteric ischemia vs Ischemic colitis

	Mesenteric ischemia	Ischemic colitis
Etiology	• **Embolic** (in patients with **AF**) causing total loss of blood supply to one segment of the bowel • decreased mesenteric arterial blood supply (in patients with hypotension 2ry to myocardial ischemia)	• **Multifactorial** (thrombotic event or hypoperfusion such as shock, HF or MI) causing transient interruption of blood supply
Clinical features	• **sudden** onset of abdominal pain • severity of the pain **exceeds** the physical signs • **absent** bowel sounds • abdominal **distension** and tenderness • **metabolic acidosis** with high lactate	• gradual onset (over hours) • pain starts at the LIF • moderate colicky pain and tenderness with bloody diarrhea
Management	• resuscitate (O_2), rehydrate and administer IV analgesics and IV antibiotics • Urgent surgery to remove or bypass obstruction • removal of necrotic bowel maybe required	• conservative • surgical

Ramsay Hunt syndrome (herpes zoster oticus) is caused by the reactivation of the varicella zoster virus in the geniculate ganglion of the facial nerve.

- **Features**
  - **Pain deep within the ear** is often the first feature (often radiates to the ear pinna)
  - facial nerve palsy
  - vesicular rash around the ear
  - other features include vertigo and tinnitus
- **Management**
  - oral acyclovir and corticosteroids are usually given

Pain ladder:

1. Simple analgesics: aspirin, NSAIDs
2. Weak opioids: codeine, tramadol
3. Strong opioids: morphine, fentanyl, diamorphine, oxycodone
4. Nerve block epidural

- After myocardial infarction, elective surgery should not be performed for the next **6 months**

- Blood pressure will be raised in any patient who's in pain

- Superior laryngeal nerve injury → ***Dysphonia*** (inability to create high-pitched voices), they would have monotonous voice
- Unilateral RLN injury → ***Hoarseness of voice***
- Bilateral RLN injury → ***Aphonia*** and ***airway obstruction***

- If the patient presents with a typical lipoma where the mass hasn't been growing at all → ***Reassure***
- If there's a possible lipoma of liposarcoma and there's uncertainty → ***US***
- If the US shows features of a liposarcoma → ***MRI***
- If there's doubt of its diagnosis with imaging or if it's interfering with the patient's activities (e.g. difficulty sitting back against a chair) → ***Removal by excision***