

SURGERY

- **Cranial vault fracture:** a fracture of ≥ 1 of the cranial vault bones; can be a closed or open skull fracture.
- **Diastatic skull fracture:** a fracture along the skull suture lines (most commonly seen in newborns and infants)
- Avoid nasogastric tubes and nasotracheal intubation in patients with a suspected ethmoid bone fracture, as they may cause direct intracranial injury.
- **Liquorrhea** - external leakage of CSF via a dural tear
- **CSF rhinorrhea:** leakage of CSF from the nose
- **CSF otorrhea:** leakage of CSF from the external auditory meatus
- **Temporal bone fractures** - Often associated with epidural hematoma due to proximity of the temporal bone to the middle meningeal artery
- **Most common cause of temporal bone fractures:** traffic-related injuries (e.g., motor vehicle collisions, bicycle vs. pedestrian collisions)
- **Drowning:** respiratory impairment and/or the sensation of respiratory distress caused by submersion or immersion in a liquid
- **Immersion syndrome:** the autonomic and respiratory responses caused by sudden immersion in cold water
- **Shallow water blackout:** unconsciousness occurring during submersion that is caused by hypoxia after intentional hyperventilation
- **Drowning**
Arterial blood gas: may show respiratory failure and/or metabolic acidosis
CXR may show x-ray findings of pulmonary edema (e.g., bilateral diffuse opacities)
- **Scoliotic curves** greater than 45-50° generally require surgical stabilization to prevent progression and respiratory compromise. Bracing is usually reserved for curves between 25° and 40°.
- Cryptococcal meningitis is a common opportunistic infection in HIV patients. The **India Ink stain** is positive for the encapsulated yeast **Cryptococcus neoformans**.
- Sodium Valproate is the broad-spectrum AED of choice for generalized tonic-clonic seizures.
- Berry aneurysm is most common cause of Subarachnoid hemorrhage
- Xanthochromia in subarachnoid hemorrhage
- Blood in CSF is hallmark of SAH
- CSF finding in MS - Oligoclonal bands
- The '**dural tail**' sign on MRI is a characteristic radiological finding of a meningioma, which is an extra-axial tumor attached to the dura.
- The triad of upper respiratory tract involvement (sinusitis, saddle nose), lower respiratory tract (hemoptysis), and renal failure (glomerulonephritis) is classic for Granulomatosis with Polyangiitis (Wegener's). c-ANCA (anti-PR3) is the specific marker.

- The sequence of provocation (crying/upset) -> cyanosis -> loss of consciousness is classic for a cyanotic breath-holding spell. It is not epilepsy.
- ACTH (Adrenocorticotrophic hormone) is the first-line treatment for West Syndrome (**Infantile Spasms**). - EEG showing hypsarrhythmia
- Massive splenomegaly, pancytopenia, and the 'Erlenmeyer flask' deformity of the femur are classic for **Gaucher disease**.

Normal Pressure Hydrocephalus

- Wobbly, Whacky, Wet
- Dementia
- Gait Apraxia
- Urinary incontinence

- **Succussion splash** seen in gastric outlet obstruction - audible sound from gastric dilatation on shaking the patient's abdomen
- **Krukenberg's tumor** - Gastric cancer that has metastasized to ovaries
- **Sister Joseph's Nodules** - Gastric cancer that has metastasized to umbilicus
- **Swinging pyrexia** - cholangitis
- **Bird beak sign**: in volvulus
- **Apple core sign**: in colonic malignancy
- Barium enema is contraindicated if bowel perforation is suspected (water-soluble contrast enema can be used instead).
- In intussusception, stool is normal initially, but later becomes "**redcurrant jelly**" i.e. contain blood and mucus
- **Nasogastric (NG) decompression** uses a tube through the nose to the stomach to remove air, fluid, and stomach contents, relieving pressure from conditions like bowel obstructions or ileus, preventing vomiting, and monitoring recovery.
- **Widal test** for typhoid fever (enteric fever)
- **Bronze baby syndrome** - When infants with conjugated hyperbilirubinemia are given phototherapy, they develop brown discoloration of skin, which persists for many months.
- **Marasmus** - severe wasting
- **Kwashiorkor** - characterised by edema
- **Olive shaped mass** in RUQ - Pyloric stenosis
- **Sausage shaped mass** in RUQ - Intussusception
- **Red currant jelly stool** - Intussusception
- **Dance sign** (Empty RLQ) - Intussusception
- **Double bubble sign** on X Ray - Duodenal atresia
- **Coffee bean sign** on X Ray - Sigmoid volvulus
- **Sunsetting sign** - Hydrocephalus, Perinaud syndrome (dorsal midbrain)

Calot's Triangle

- aka cysto hepatic triangle
- contains the cystic artery
- Boundaries

Medially - common hepatic duct
Laterally - cystic duct
Superiorly - inferior surface of liver

Ulcers

- Intestinal amoebiasis
 - ulcer is flask shaped and bottlenecked
 - most common site is rectosigmoid junction
- Typhoid
 - ulcer is parallel to long axis of gut
 - most common site is terminal ileum
- Intestinal TB
 - ulcer is transverse to long axis of gut
 - most common site is terminal ileum
- Amebiasis
 - flask shaped ulcers in intestinal mucosa

Important Points

- Ogilvie's syndrome - acute colonic pseudo obstruction
- Littre's hernia - Inguinal or femoral hernia in which content of sac is Meckel's diverticulum
- Serum lipase is more specific for acute pancreatitis than serum amylase
- Albuminocytologic dissociation on CSF - Guillain Barre Syndrome GBS
- For GBS - IVIG or plasmapheresis

Ulcerative Colitis

- C - Continuous Lesion
- O - Often Rectum (starts at rectum and spread proximally) - Backwash ileitis
- L - Lead pipe appearance (barium study)
- I - Immunity (p-ANCA positive)
- T - Toxic Megacolon (Dx by X Ray or CT)
- I - Increased risk of cancer (involves colon rather than rectum) - Colonoscopy performed 7-10 years after diagnosis of UC and then repeated every 1-2 years
- S - Smoking protective, Spares the anus
- Pseudopolyps seen in chronic case (differentiating factor from Crohn disease) - Pseudopolyps on sigmoidoscopy indicates that there has been remission and relapse
- Watery or bloody diarrhea - First and hallmark feature
- Investigations - Abdominal X Ray, Barium Enema, Sigmoidoscopy, Colonoscopy and biopsy, Stool culture

Crohn's Disease

Mnemonic: SISTER-MACCC

- S - Skip Lesions
- I - Ileum M/C (Terminal ileum Most common)

- S - String Sign of Kantor i.e. narrowed terminal ileum seen on small bowel enema
- S - associated with *Saccharomyces Cerevisiae* - ASCA positive
- T - Transmural inflammation, Full thickness
- E - Entire wall
From Full thickness and entire wall - Remember Fistulas, Fissures
Fistulas - Enteroenteric fistulas, Enterovesical fistulas, Enterocutaneous fistulas
- R - Rectum spared
- M - Microscopy: Non caseating granuloma (Hallmark)
- M - Megaloblastic anemia (Folate and Vitamin B12 malabsorption)
- A - Aphthous ulcer (First Lesion) - progress to Serpiginous ulcer
- C - Cobblestone appearance (inside of intestine)
- C - Creeping fat (outside of intestine)
- C - Cytokine TNF alpha raised
- C - Calcium oxalate kidney stones
- CT Abdomen and pelvis - best test for acute presentations and complications

Radiological signs of mechanical bowel obstruction common to all imaging modalities

- Dilatation of bowel loops proximal to the obstruction
 - 3-6-9 rule (Small bowel > 3 cm, Large bowel > 6 cm, Cecum > 9 cm)
 - Small intestinal obstruction: Dilated loops are predominantly central.
 - Large intestinal obstruction: Dilated loops are predominantly peripheral.
- Air-fluid level
 - Visible on upright or decubitus views
 - > 2 air-fluid levels
 - Air-fluid level diameter > 2.5 cm
 - Air-fluid levels of different heights visible within the same bowel loop
- Intraluminal air beyond the site of obstruction
 - Complete bowel obstruction: minimal or no air distal to the obstruction
 - Partial bowel obstruction: Some air (and/or oral contrast, if used) is often visible beyond the site of obstruction.
- Evidence of complications
 - Bowel perforation: pneumoperitoneum
 - Bowel ischemia:
Decreased or abnormal contrast-enhancement of the bowel wall on contrast imaging;
Bowel wall thickness increased to > 3 mm on CT, US, or MRI;
Pneumatosis intestinalis: gas in mesenteric veins;
Free fluid between dilated loops
- Evidence of the underlying etiology
 - Whirl sign in volvulus
 - Target sign in intussusception
 - Intraabdominal malignancy
 - Diverticuli

EEG

- Hepatic encephalopathy - diffuse slowing of normal alpha waves with eventual development of delta waves
- Grand mal epilepsy (Tonic clonic seizures) - bilateral multiple high voltage spike discharges or spikes and waves during fits
- Petit mal epilepsy (Absence seizures) - During attacks there is characteristic 3 per second spike-wave pattern
- Myoclonic epilepsy - fast spike wave complexes and a normal background rhythm
- Complex partial seizures - sharp waves or spikes in the anterior temporal lobes. Spikes in frontal, parietal, and occipital lobes are less common

X Ray

- **Peritonitis** - Gas under the diaphragm in erect chest X Ray
- **Hiatal hernia** - Gas bubble, with air fluid level in chest and in abdomen
- **Perforated peptic ulcer** - Gas under the diaphragm in erect chest X Ray (seen in 50% of cases)
- **Porcelain gallbladder** - calcification
- **Emphysematous cholecystitis** - gas in the wall of gallbladder
- 10% gallstones are radio opaque stones. Stones may contain radiolucent gas in the center giving the Mercedes Benz sign
- **Sentinel loop sign** on abdominal X Ray - in upper abdomen may indicate pancreatitis, while in lower right quadrant may indicate appendicitis
- **Colon cutoff sign** - classically linked to pancreatitis - X-ray showing gas-filled, dilated bowel loops abruptly stopping at the splenic flexure (left side of the colon), with the rest of the colon appearing empty
- **Renal halo sign** - seen in pancreatitis
- **Diverticulitis perforation** - gas under diaphragm on erect CXR
- **Ulcerative colitis**
 - edematous colonic mucosa (thumb printing)
 - small bowel loops in RIF is a sign of severe disease
 - may show loss of haustration and no fecal shadows in affected part

Most Common Site

- Diverticulosis - Sigmoid colon (90%)
- Ulcerative colitis - starts at rectum
- Crohn's disease - Terminal ileum (40%)
- Intestinal Amoebiasis - Rectosigmoid junction
- Typhoid - Terminal ileum
- Intestinal TB - Terminal ileum
- Carcinoid tumor - Appendix
- GIST - Stomach
- Familial Adenomatous Polyposis - Large bowel

- Hereditary non polyposis colorectal cancer - Proximal colon
- Colonic carcinoma - Rectum (38%)
- Angiodysplasia - Ascending colon and cecum
- Intussusception in children - ileocolic
- Intussusception in adults - colocolic
- Pseudo obstruction - colon
- Ischemic colitis - Griffith's area i.e splenic flexure (ischemic colitis typically affects watershed areas)
- Intestinal atresia - duodenal most common
- Meconium ileus - Terminal ileum

Barium Enema

- Colonic carcinoma - Apple core appearance
- Ulcerative colitis - loss of haustrations, pseudo polyps
- Crohn's Disease - String sign of Kantor i.e narrowed terminal ileum
- Ileocolic intussusception - claw sign
- Cecal Volvulus - Absence of barium in cecum and a bird-beak deformity

Most common cause

- Meconium ileus - Cystic fibrosis
- Acute appendicitis
 - Obstruction is mostly by lymphoid hyperplasia in children
 - Obstruction is mostly by fecolith in adults

Inheritance Patterns

- Peutz Jeghers Syndrome - Autosomal Dominant
- FAP - Autosomal Dominant
- Crigler Najjar syndrome I - Autosomal Recessive
- Crigler Najjar syndrome II - Autosomal Dominant
- Gilbert Syndrome - Autosomal Dominant
- Dubin Johnson Syndrome - Autosomal Recessive
- Rotor Syndrome - Autosomal Recessive
- Wilson Disease - Autosomal Recessive
- Marfan Syndrome - Autosomal Dominant
- Hurler syndrome - Autosomal Recessive
- Hunter Syndrome - X linked recessive
- Phenylketonuria - Autosomal Recessive
- Alport Syndrome - X Linked Dominant

- Benign intracranial hypertension (psuedotumor cerebri) precipitated by Vitamin A, OCPs and tetracycline
- Intranuclear ophthalmoplegia - demyelination of medial longitudinal fasciculus in midbrain
- Neuromyelitis Optica - refers to transverse myelitis with bilateral optic neuritis
- Pick's disease - Frontotemporal dementia (Atrophy of frontal and temporal lobes)
- Pick bodies - inclusion bodies of Tau protein
- Huntington's disease - Autosomal dominant
- Huntington's disease shows phenomenon of Anticipation - earlier expression and more severe disease in subsequent generations
- Negri bodies seen in rabies
- SAAG = (Serum Albumin) - (Albumin level of Ascitic fluid)
- Exudative Ascites
 - Non-Portal hypertension related Ascites
 - Protein concentration > 25 g/L
 - SAAG < 1.1 g/dL
 - Causes - Peritonitis, Pancreatitis, Vasculitis, Nephrotic syndrome etc
- Transudative Ascites
 - Portal hypertension related Ascites
 - protein poor and cell poor fluid
 - Protein concentration < 25 g/L
 - SAAG > 1.1 g/dL
 - Causes: Cirrhosis, Acute hepatitis, Liver malignancy, Budd chiari syndrome, RHF, Schistosomiasis, Splenic vein thrombosis
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