General Surgery

Acute appendicitis
Acute cholecystitis
Obstructive jaundice
Acute pancreatitis
Small bowel obstruction
Large bowel obstruction
Haeatemesis and malaena
Rectal bleeding ie colon cancer including operation
Inguinal hernia including operation
Dysphagia - malignant including treatment
Thyroids swelling
Breast cancer
Hepatoma
Liver abscess
A case with colostomy or ileostomy
Perforated duodenal ulcer
Generalised peritonitis
Acute abdomen (diverticulitis)
Ruptured spleen
Case with enlarged LN in neck
Gastric cancer
CABG
Lung cancer for surgery
Head injury
Patient for radiotherapy and chemotherapy
Burns patient

1. Acute appendicitis
2. Acute cholecystitis
3. **Obstructive jaundice**

History

- Tea color urine 2/12
- Dull epigastric abdominal pain – unsure of radiation but got back pain
- Pale stool
- LOW and LOA
- No change in BO, no PR bleeding
- No yellowing of skin
- No chills or rigor
- No nausea vomiting, dysphagia, odynophagia, no hematemesis
- Got dyslipidemia on statin, no DM or HTN, no IHD
- Non smoker or alcoholic drink
- **In this case, the complication can be metastasis of carcinoma to bone, brain or lung

Physical examination

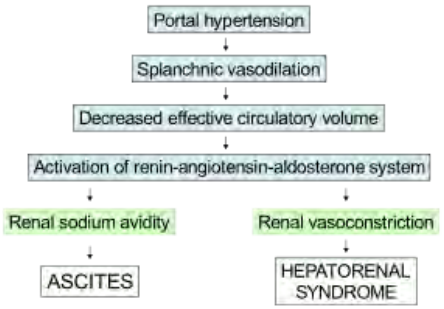
- Jaundice
- Cachexic looking
- Scratch mark due to pruritus
- **Virchow's node (Troisier's sign - palpable virchow's node)– malignancy**
- Courvoisier sign:
    - Painless progressive jaundice with palpable gallbladder is unlikely to be due to stones (carcinoma head of pancreas until proven otherwise - Mr. Manjit)
    - *Ludwig George Courvoisier from Basel, Switzerland*

DDx

- **Obstructive jaundice (NOT A COMPLETE DIAGNOSIS)** 2° periampullary carcinoma (duodenal Ca, head on pancreas Ca, distal cholangiocarcinoma)
- Obstructive jaundice 2° other periampullary carcinoma
- Obstructive jaundice 2°
    - Gallstones
    - Stricture
    - Schistosomiasis - worms

Investigation

- Laboratory
    - FBC - WCC, Hb
    - Coagulation profile: **because patient may be coagulopathic due to "vitamin K deficiency"**
        - **(no bile to break the fat for reabsorption thus no fat-soluble vitamins)**
        - **Vitamin K deficiency will cause prolonged PT/INR**
        - **Thus must stabilise the coagulation profile before attempting ERCP or any surgery**
        - **Give IM vitamin K for 5-7 days**
    - LFT: ALP and gGT (raised in obstructive jaundice)
        - gGT - gamma glutamyl transferase
        - ALP is release in case of inflammation/infiltration of the CBD
    - Total bilirubin - direct and indirect
        - In surgical jaundice, the direct bilirubin will be raised
    - RP: electrolyte, hydration, any hepatorenal syndrome



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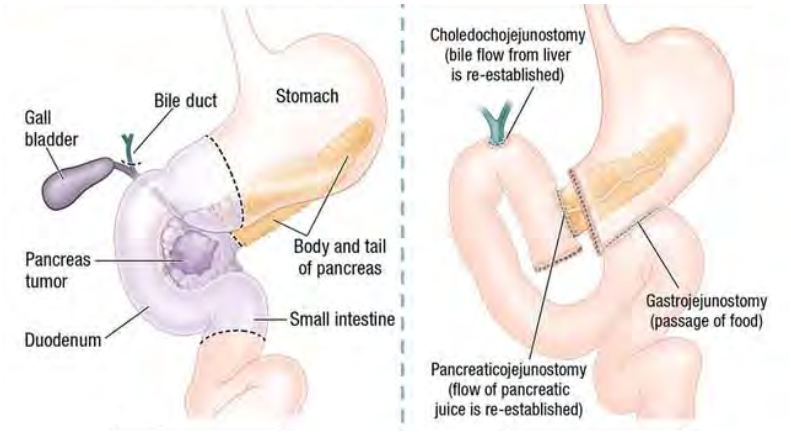
    - Urinalysis/urine dipstick: look for urobilinogen (quick test but not quantitative)
    - Serum amylase: TRO pancreatitis
    - FBG and 2 hours postprandial

    - FLP - hypercholesterolemia is RF for pancreatitis
- Imaging
    - USS: distended gallbladder indicate the obstruction distal to the cystic duct (so the bile can flow into the bladder)
        - Distension of hepatobiliary tree
        - Any acoustic shadow
        - Any periampullary edema
    - CXR: lung mets
    - CT TAP: staging ??? - if DDx is HCC
    - **In ideal setting, I would like to do MRCP first than ERCP (shawn)**
    - MRCP (in KKM setting, about a month waiting list):
        - More readily available
        - Safest option, non-invasive
        - **Diagnostic only, not therapeutic.** Give better diagnostic features thou
    - ERCP: diagnostic and therapeutic
        - Can do **stenting** thru the ampulla without sphincterotomy. Sphincterotomy can cause the CBD become too loose causing the stent to become not stable
        - Normally sphincterotomy done in stones removal (especially if stone >1 cm)
        - Steps for stone removal → first you stent and then second you manually clear the stone (balloon clearance or lithotripsy) and last you check whether any stone left over
        - Biopsy can be taken using **brush cytology** (done in suspected tumour). This is because the **thru cut biopsy cannot be done in CBD (too small, too fragile and too easily bleed)**
    - Complication of ERCP
        - Infection ie ascending cholangitis and pancreatitis
        - Duodenal perforation
        - Bleeding

Treatment

- **Whipple procedure (is a curative surgery) + triple therapy**
    - Triple therapy is **choledochojejunostomy, gastrojejunostomy and pancreaticojejunostomy** (jejunojejunostomy)



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- Whipple (pancreaticoduodenectomy) is not done as palliative surgery - in case of palliative patient, just stent or just excise the tumour + chemotherapy

- **WHIPPLE AIM AS CURATIVE PROCEDURE**
- It is known as triple surgery
  - Assess
  - Resection
  - Reconstruction
- SEMS stent – **self-expanding metallic stent** – last up to 2 years
- Chemotherapy for palliation
- PTBD (percutaneous transhepatic biliary drainage) done if ERCP + stenting failed

Discussion

- In making diagnosis, entertain the 3C. This apply to both HT and PE
  - Cause
  - Condition
  - Complication
- **Palpable gallbladder means the obstruction is post cystic duct to ampulla**
- ERCP can only reach the duodenum, what ever seen in the CBD is seen **indirectly thru fluoroscopy as the dye is injected**. Below is indirect evidence of benign or malignant:
  - Benign: **smooth tapering (chronic infection and stone** can cause this too)
  - **Malignancy: abrupt shouldering tapper**
- PET scans not specific and sensitive. Usually not used as diagnostic tool, but more to staging tool
- In case if the ERCP + brush cytology cannot tell malignancy. You don't need to have HPE result to diagnose hepatobiliary cancer, often radiological diagnosis jer. Danger of seedling
- CT guided percutaneous biopsy in hepatopancreaticobiliary cancer done in palliative cases jer (because worry of seedling) as to find the best chemo agent for it
- **Ca19.9** use as monitoring tumour marker rather than diagnostic ← serum marker for pancreatic cancer
- **Temporary stent normally last for only 6 months**

4. Acute pancreatitis

History

- Epigastric pain 1/7, no radiation, gradual constant pain
- Vomiting non projectile, nonbilious or food and hematemesis
- Fever
- No radiation or alleviating
- Similar episodes last year → so what was done; any medication, ERCP done, any stones removal
- Jaundice and tea colored urine 1/7
- No pale stool or pruritus
- On traditional medication for 3 years (STEROIDS)
- Seafood allergy
- Non smoker and non alcoholic
- Can ask cardinal symptoms of malignancy
- RF for pancreatitis - I GET SMASHED

Physical Examination

- Murphy sign - sudden arrest of inspiration due to pain **(suggest cholecystitis)**
- Jaundice

DDx

- Acute cholecystitis
- Ascending cholangitis 2° choledocholithiasis
- PUD
- Acute gallstone pancreatitis

Investigation

- FBC: WCC for infection
- RP: dehydration and electrolytes imbalance
- Serum amylase/urine amylase TRO pancreatitis
- LFT: ALT, ALP and bilirubin (may be raise in pancreatitis but not as high as in obstructive jaundice)
    - **If LFT worsening, do ERCP to access CBD**
- Transabdominal USS of hepatobiliary system - can visualised the **dilated system**, not the stone per say
- CT scan can show 2 thing either **acute or chronic pancreatitis OR interstitial or necrotising pancreatitis**
    - **Interstitial → pseudocyst**
    - Necrotising → necrosis
    - CT scan can show liver injury, gallstone, hepatobiliary system
- MRCP indication
    - Soft tissue assessment
    - Assess the biliary tree (especially any extraluminal pathology)
    - Other surrounding structure
- ERCP
    - Assess intraluminal pathology
    - Filling defect contrast - looking for shouldering (abrupt or smooth - stone and infection)

Treatment

- Analgesia
- Bowel rest
- Adequate hydration
- Treatment of pancreas is mostly asymptomatic
- Then treatment focus on tackling the underlying cause: I GET SMASHED → if not, recurrent inflammation will cause **scarring of pancreas causing pancreatic insufficiency**
- **Pancreatic Ca - poor prognosis (about 6 months)**

Discussion

- Small stones from gallbladder can travel down causing obstruction at the pancreatic duct causing **intermittent jaundice**
- Why obsess with pancreatitis (even got his own classification)?
    - Because pancreatitis not only causing problem to its structure but will **cause systemic problem due to its enzyme-produced.**
    - Systemic inflammation → SIRS → ie **ARDS, AKI, shock** etc
    - Scoring point in **Ranson criteria will assess the function of other organs (CHOBBS)**
    - Older patient (>65) have an extra 1 point in Ranson as they may present with atypical presentation
    - Based on scoring, the higher the mark the closer the monitoring need to be, need for ventilation and ICU admission
- Surgical intervention have not much place in acute setting of pancreatitis
- If severe or chronic pancreatitis, surgical intervention begin when patient is stabilised/acute