Case Studies in Liver and Pancreatic Disease

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GLMS CME Programme
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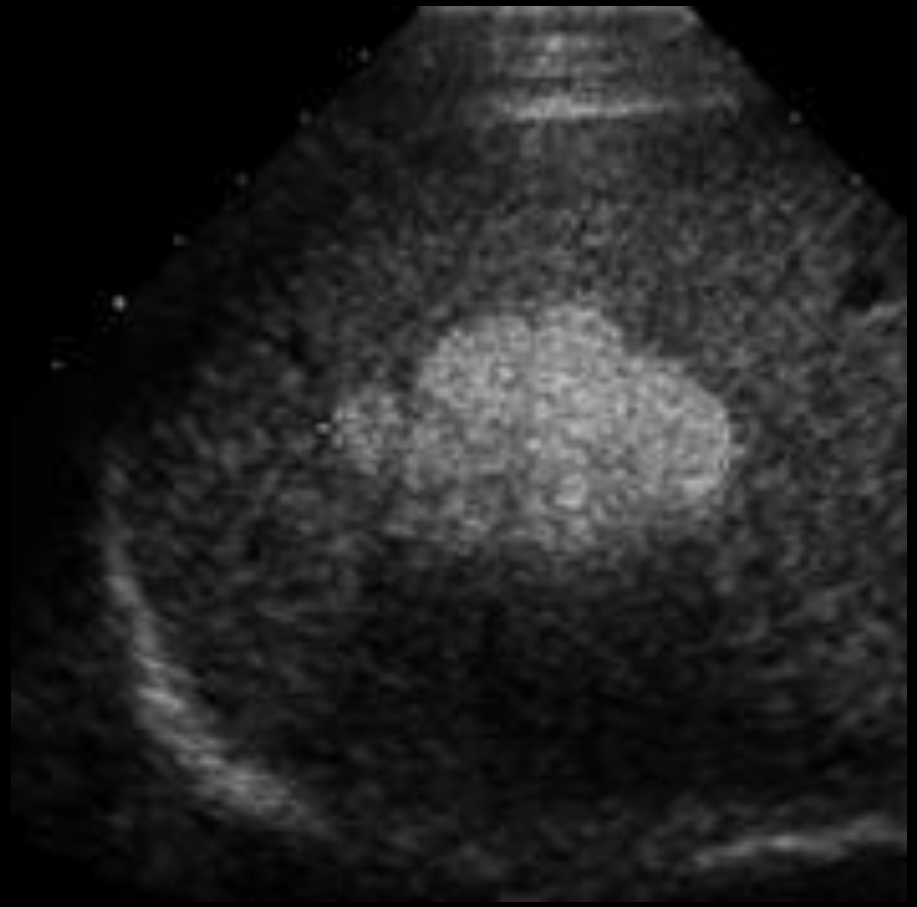
Case 1

- 35 fit and well female
- One episode of mild RUQ discomfort, no other symptoms
- No family history of note
- On oral contraceptive pill
- Nil significant finding on examination or blood tests
- USS requested

Case 1



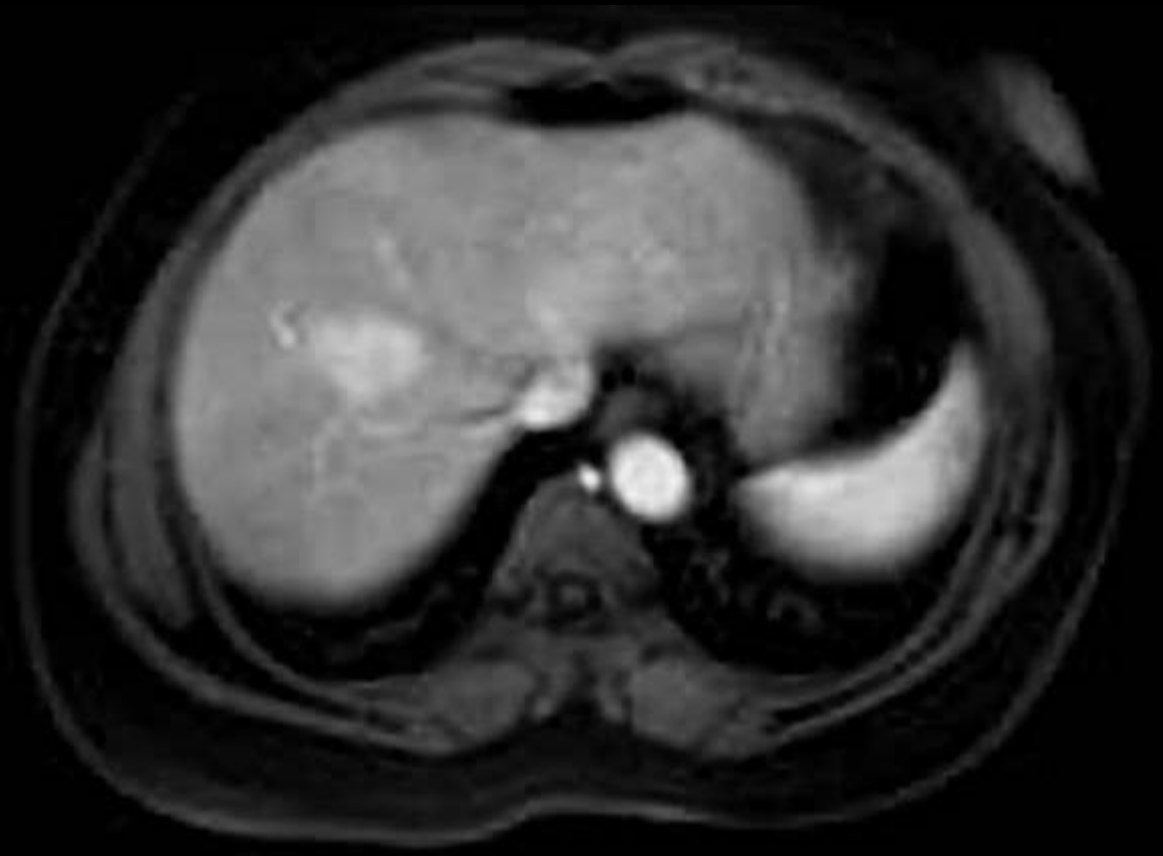
Solitary, well demarcated, heterogenous mass

The report will say “This is most likely … but further imaging recommended”

Case 1

- What would you do?
  1. Ignore it completely
  2. Repeat USS in 6 months
  3. Refer for liver biopsy
  4. Request further imaging
     - CT vs MRI
  5. Refer to HPB surgeon

Case 1



3 cm arterial enhancement

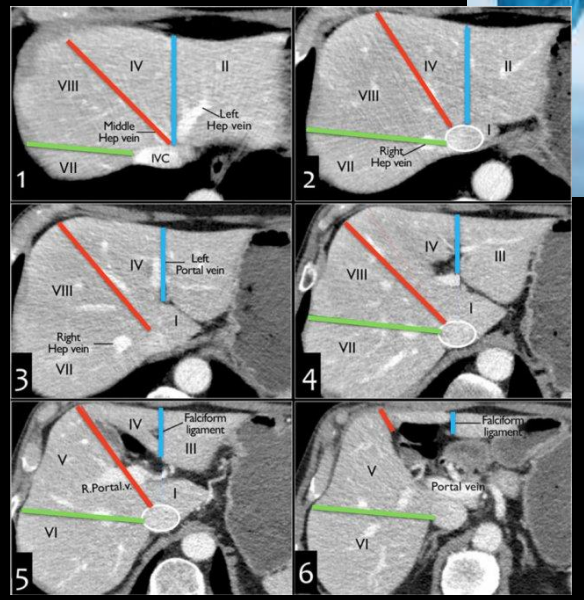
Likely adenoma (as you all suspected)

Case 1

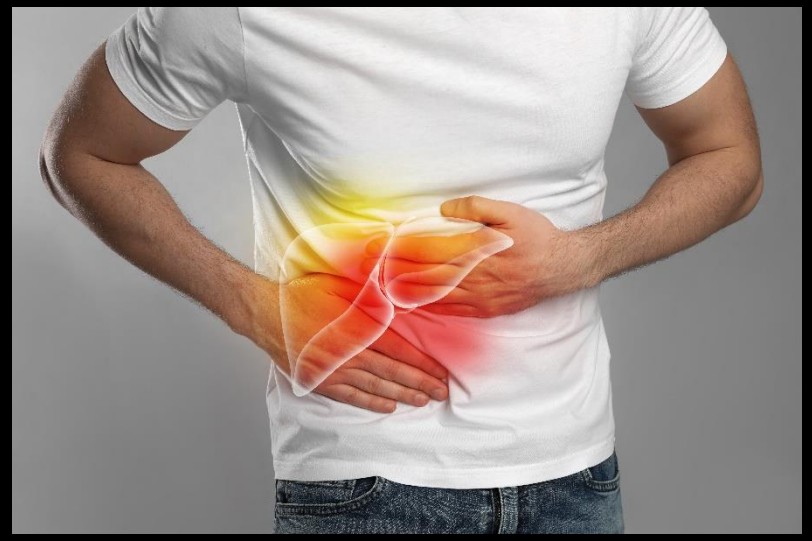
- What would you do now?
  1. Ignore it completely
  2. Repeat imaging in 6 months
  3. Refer for liver biopsy
  4. Refer to HPB surgeon
- My recommendation would be (2) and (4)
  - Can argue for either USS or MRI
  - Stop OCP
  - Discussion re. potential surgery in future…

Work up for liver lesions

- Triple assessment (My mantra for pretty much all conditions…)
  - Clinical
  - Pathology
    - Blood tests +/- Histology
  - Radiology



Work up - Clinical



- History and examination
- Risk factory for underlying liver disease
  - Viral hepatitis (B & C)
  - ETOH
  - NAFLD or MASLD
  - Hereditary conditions such as haemochromatosis
  - PSC
- Previous history of malignancy
- Medications particularly OCP, steroids

Work up - Pathology

- Basic blood work
  - FBC
  - Renal function
  - Liver function tests, particularly Bilirubin
  - INR
  - Hepatitis serology

- Tumour markers…
  - AFP
  - CA19-9
  - CEA
  - (Occasionally CA125)

Work up - Radiology

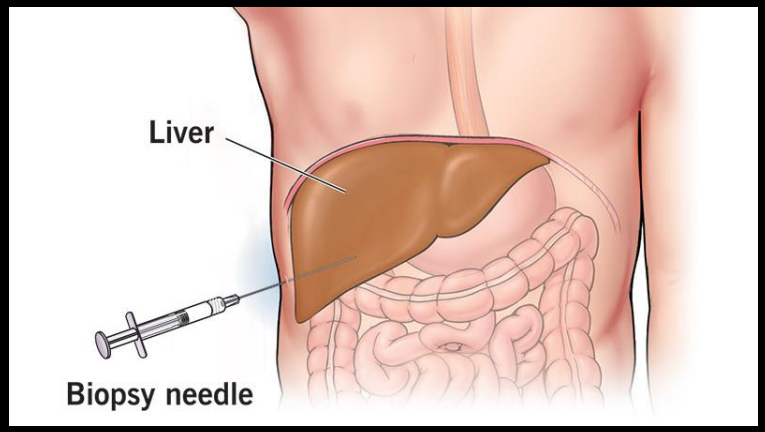
- Ultrasound
  - Contrast-enhanced Ultrasound is an option

- Cross-sectional imaging
  - Preferably MRI liver with primovist (biliary excreted contrast)
  - CT liver protocol is a feasible option if MRI contraindicated

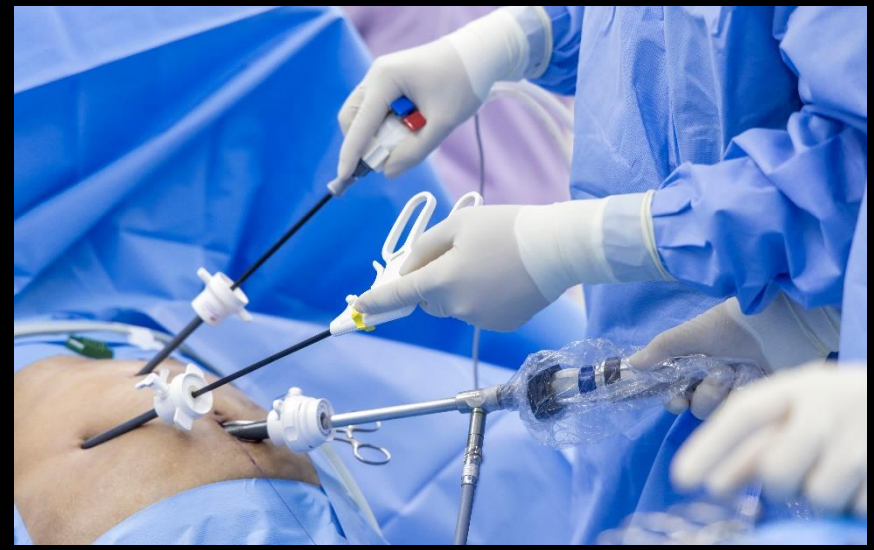
- PET-CT
  - In cases of unknown primary
  - Assessing burden of metastatic disease if considering liver surgery

Work up – Liver Biopsy or Laparoscopy

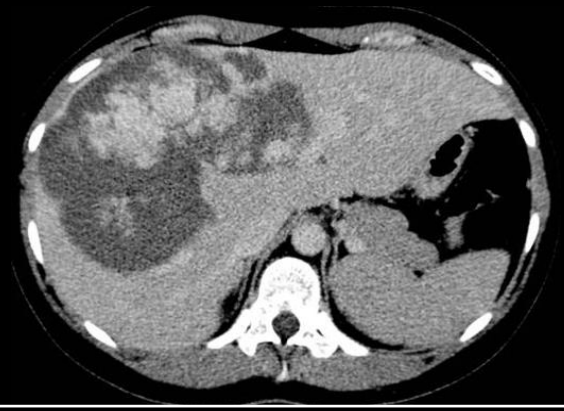
- Liver biopsy
  - Very rarely performed
  - Only done in certain cases

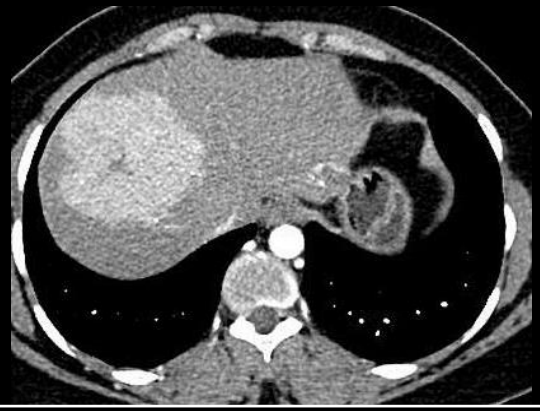


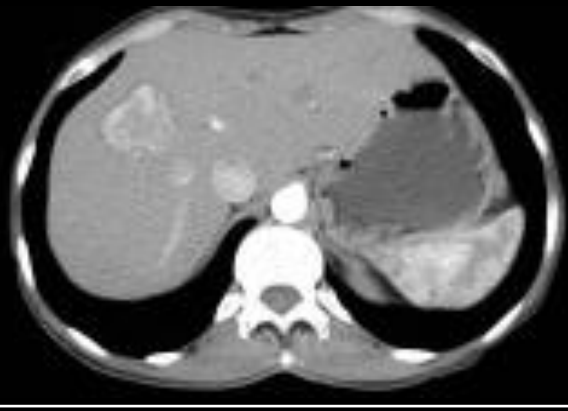
- Laparoscopy
  - Similarly, rarely performed
  - Allows direct visualisation of liver
    - Concurrent biopsy & ablation of lesion
    - Can proceed to liver surgery if required



Common Liver Lesions

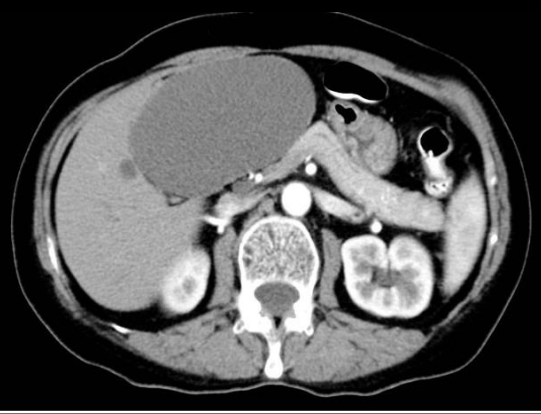


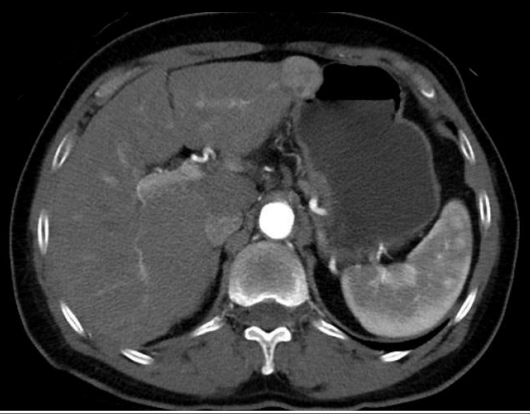


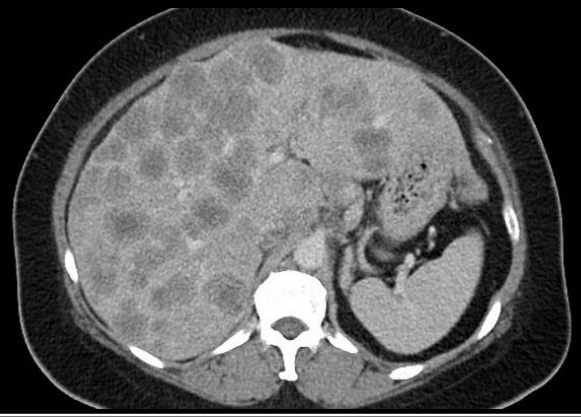


	Haemangioma	FNH	Adenoma
Definition	Venous malformation	Regenerative mass	Liver tumour (hepatocytes)
Frequency	Most common	2nd most common	Unknown
Benign/malignant	Benign	Benign	Mostly benign
Follow-up Scan	No	No	Yes – Regular imaging
Refer to Surgeon	>5cm and enlarging RUQ pain	Would like discussion	>5 cm, consider resection. In male, aim for resection.
Additional note	-	Caution in cirrhosis	Advise stop OCP/steroids

Common Liver Lesions







	Cyst	HCC	Metastasis
Definition	Fluid-filled liver lesion	Primary liver cancer	Cancer from elsewhere
Frequency	Common	5th most common world	More common than HCC
Benign/malignant	Benign	Malignant	Malignant
Follow-up Scan	No	Yes	Yes
Refer to Surgeon	Symptomatic Would like discussion	Yes	Yes
Additional note	-	Can be in non-cirrhotic	Various treatment option

Follow-up Imaging

- Haemangioma/FNH not usually
  - Cysts rarely as well

- Adenoma
  - 6-12 monthly imaging
  - Ideally off OCP and caution about pregnancy

- Post-liver resection
  - CT liver 3 months post-op

- Post-liver ablation
  - CT liver 6 weeks post-op


Time Out

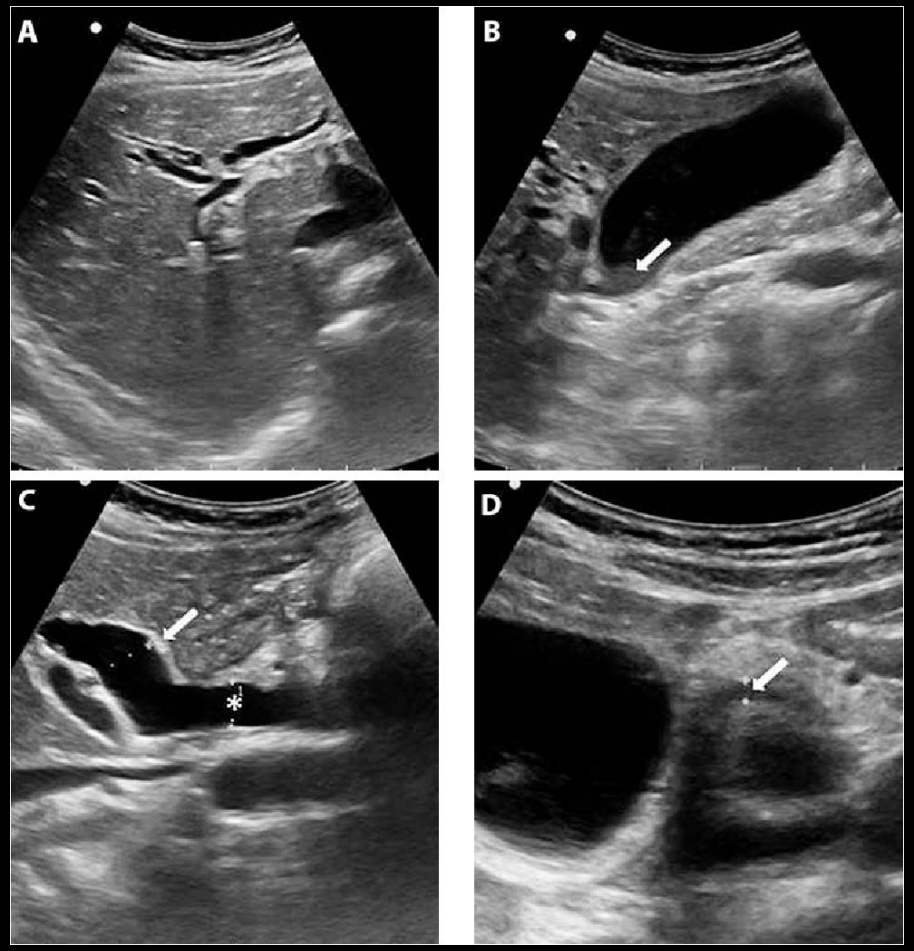
Case 2

- 50 fit and well male
- 3 days of vague RUQ discomfort, reduced appetite
  - Dark urine, pale stools
- No family history of note
- Jaundiced on examination (nil else of note)
  - Bili 90, mildly deranged LFTs, INR 1.4
  - CA19-9 / CEA / CA125 normal

Next step?

1. Repeat bloods in 24-48 hours
2. USS upper abdomen
3. CT abdo/pelvis
4. MRCP/MRI pancreas
5. ERCP
6. EUS

Case 2



Sludge in GB (B), dilated 13 mm CBD (C), dilated 4mm PD (D)

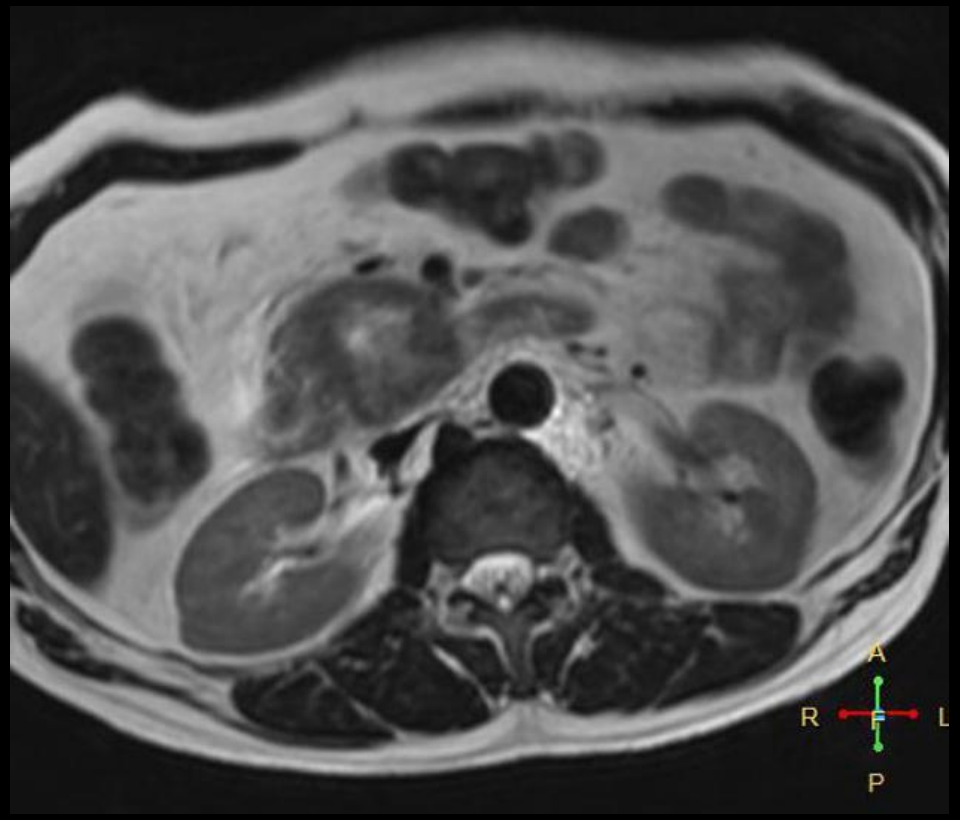
Double duct sign…

Next step?

1. Repeat bloods in 24-48 hours
2. CT pancreas + chest
3. MRCP/MRI pancreas
4. EUS
5. ERCP

However, patient also likely to get staging CT chest & CT pancreas

Case 2



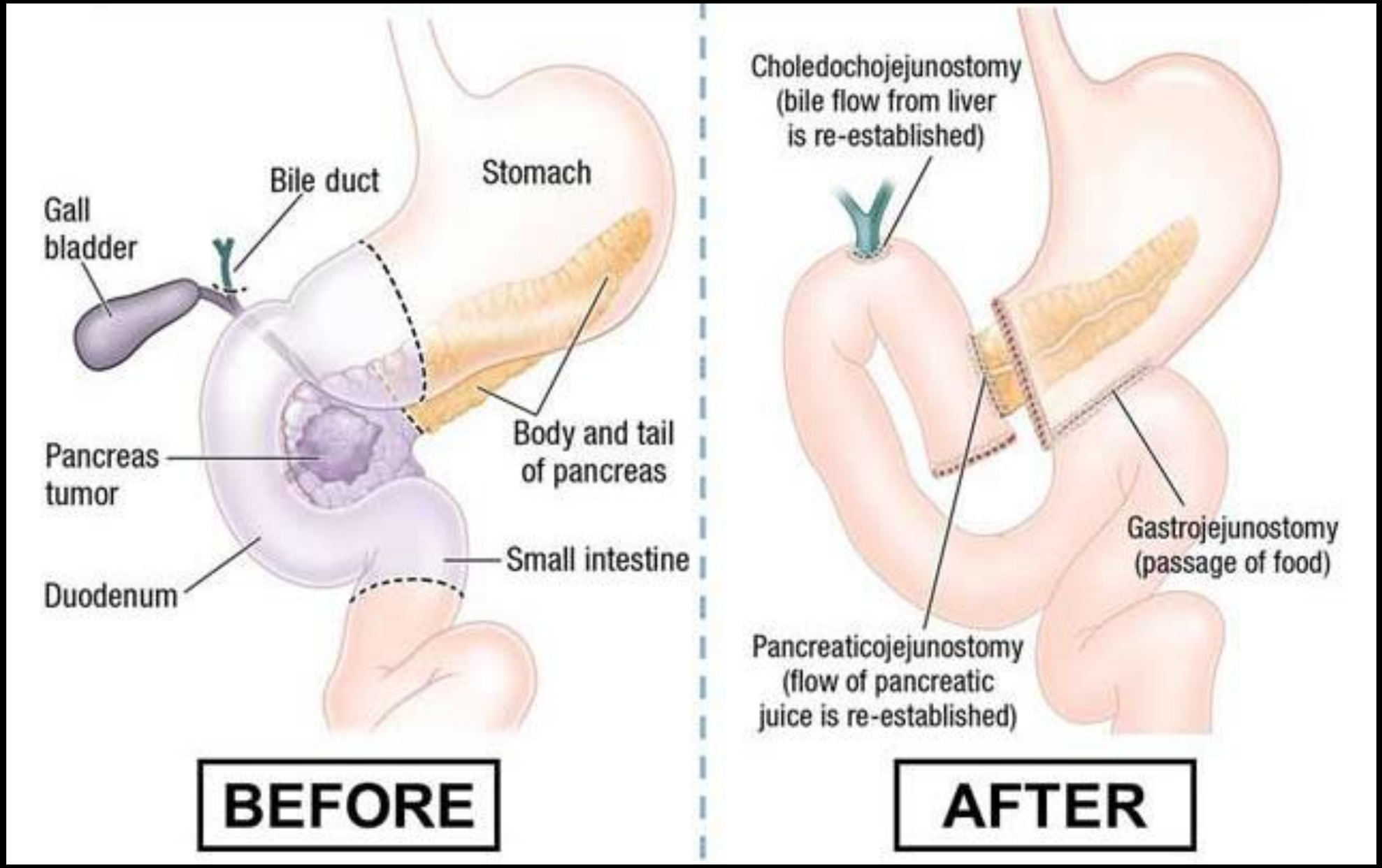
Mass head of pancreas, dilated CBD/PD

Likely pancreatic malignancy

Next step?

1. Repeat bloods in 24-48 hours
2. EUS
3. ERCP
4. Urgent surgery…

In an ideal world, urgent Whipple's but we don't live in one


Gall bladder
Bile duct
Stomach
Pancreas tumor
Body and tail of pancreas
Small intestine
Duodenum
BEFORE
Choledochojejunostomy (bile flow from liver is re-established)
Gastrojejunostomy (passage of food)
Pancreaticojejunostomy (flow of pancreatic juice is re-established)
AFTER

Work up for pancreatic lesions

- Triple assessment
  - Clinical
  - Pathology
    - Blood tests +/- Histology
  - Radiology

Work up - Clinical

- History and examination

- Risk factory for pancreatic cancer
  - Smoking
  - Diabetes
  - Chronic pancreatitis
  - Family history of pancreatic cancer

- Medications

- Previous history of malignancy
  - RCC may mimic NET

Work up - Pathology

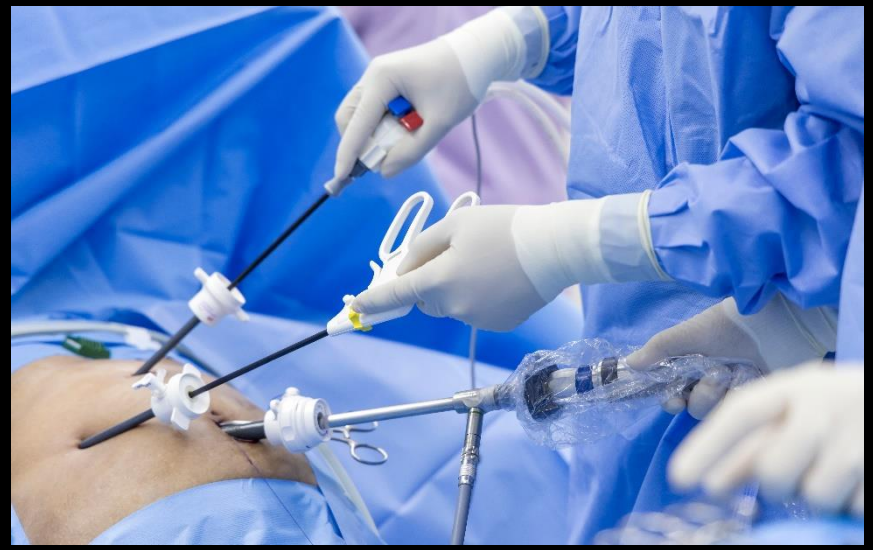
- Basic blood work
  - FBC
  - Renal function
  - Liver function tests, particularly Bilirubin
  - INR

- Tumour markers…
  - CA19-9
  - CEA
  - (Occasionally CA125)

Work up – Biopsy or Laparoscopy

- Pancreatic biopsy
  - Very very rarely performed
  - Only done in certain cases
    - Neoadjuvant treatment
    - Palliative treatment
    - Diagnostic dillemma

- Laparoscopy
  - Similarly, rarely performed
  - Concerns re. peritoneal disease

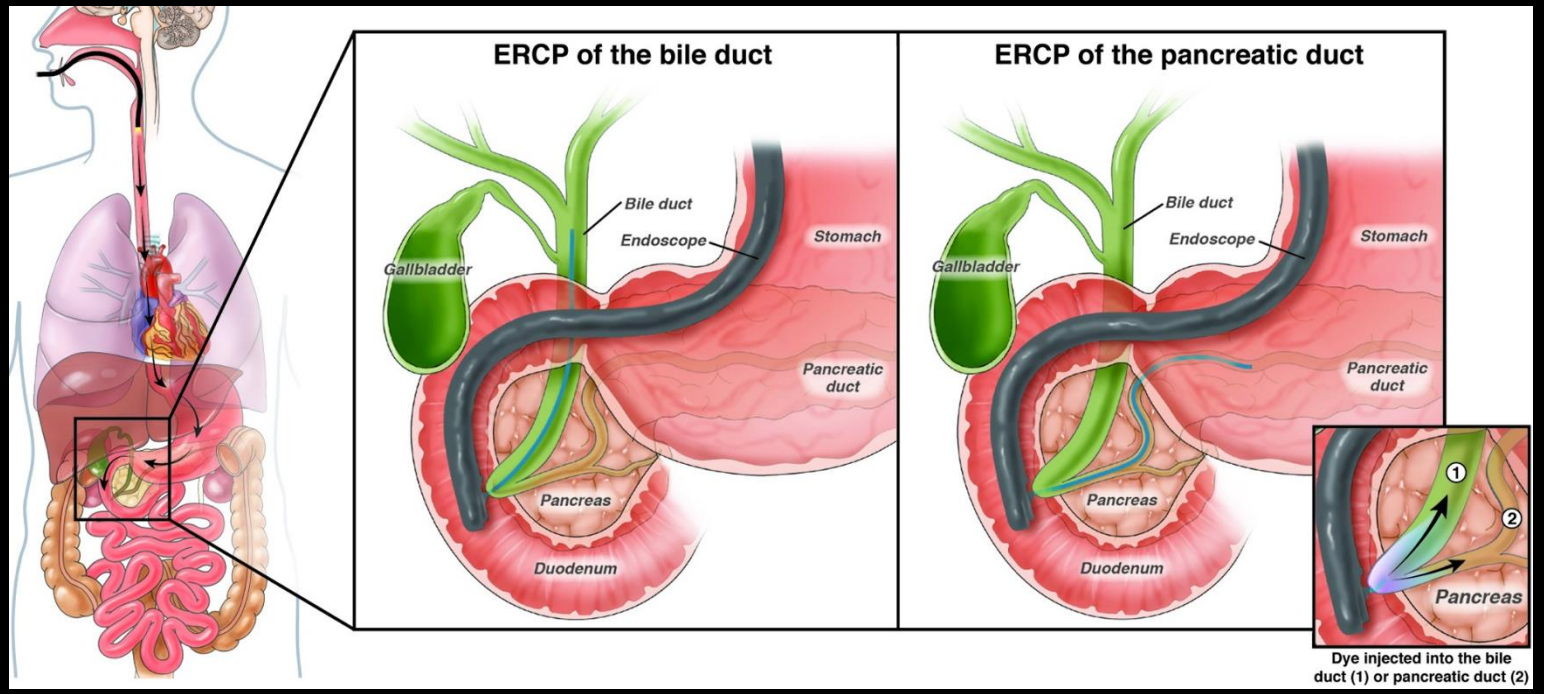


Work up - Radiology

- Ultrasound
  - Usually hard to pick up pancreatic lesion
  - Assess biliary tree/gallbladder
    - Common things happen commonly ie. gallstones

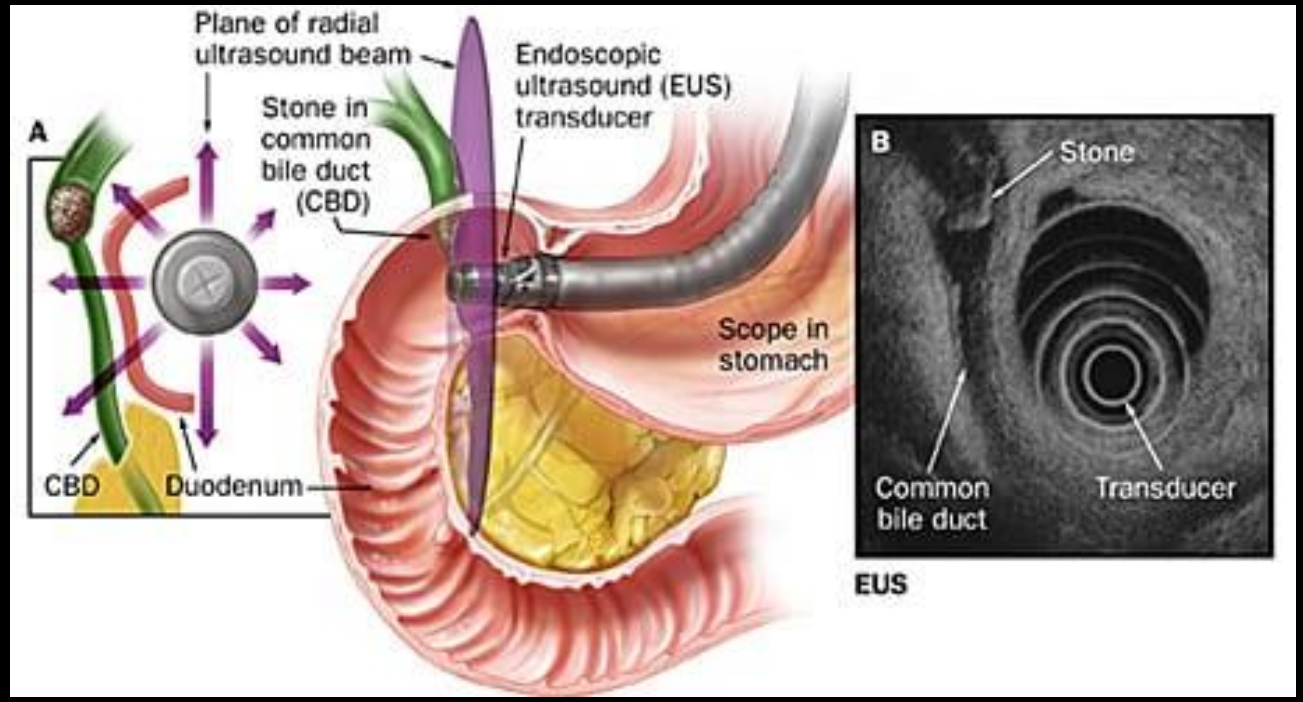
- Cross-sectional imaging
  - CT pancreas protocol is a great imaging modality
    - Assessment of vasculature
  - MRCP/MRI pancreas may be required
    - Further assess biliary tree
    - Further characterise pancreatic lesion

ERCP in Pancreatic Cancer



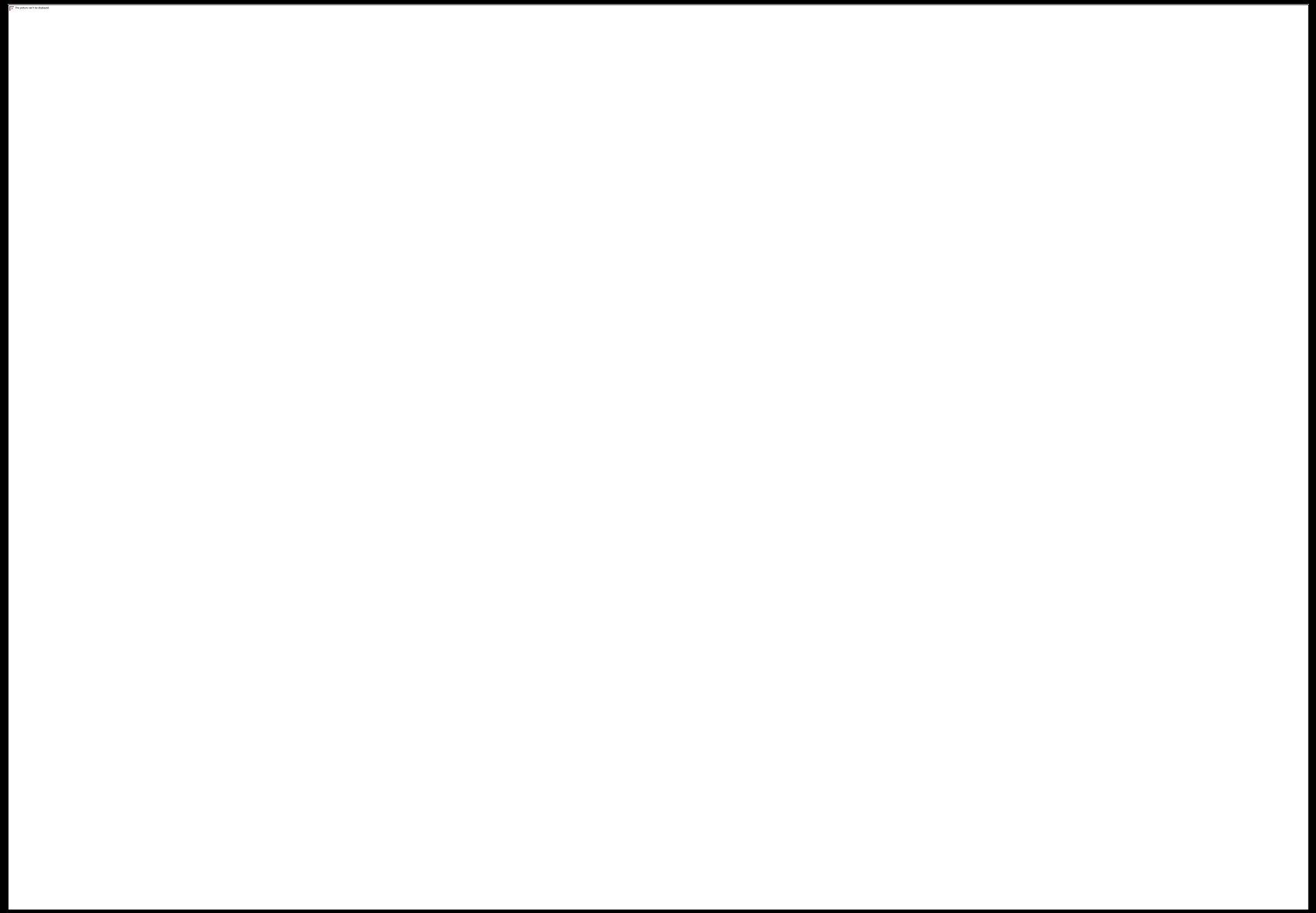
- Indications
  - Cholangitis
  - Biliary drainage prior to chemotherapy
  - Severe pruritus
  - Malabsorption

EUS in Pancreatic Cancer

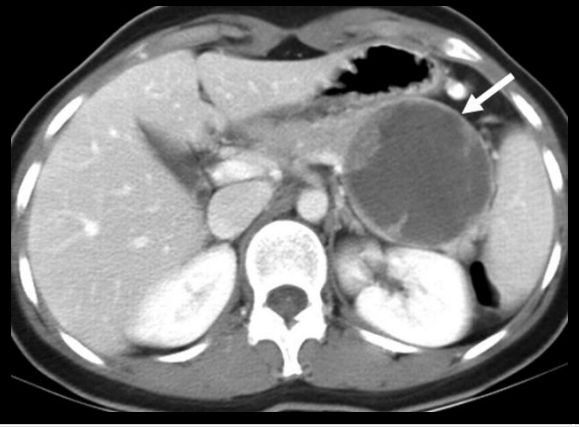


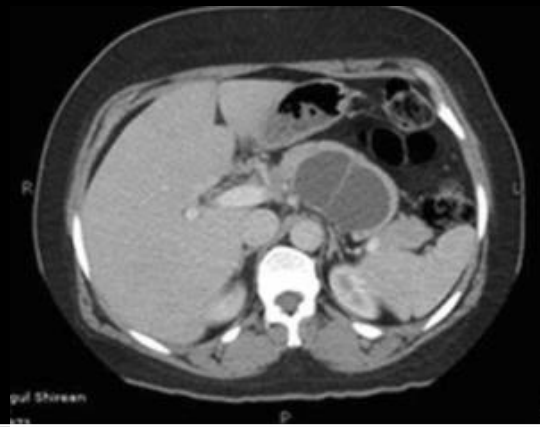
- Indications
  - Diagnostic uncertainty about mass
  - Histological confirmation prior to chemotherapy
  - Staging of suspicious lymph nodes
  - Assessing vascular involvement

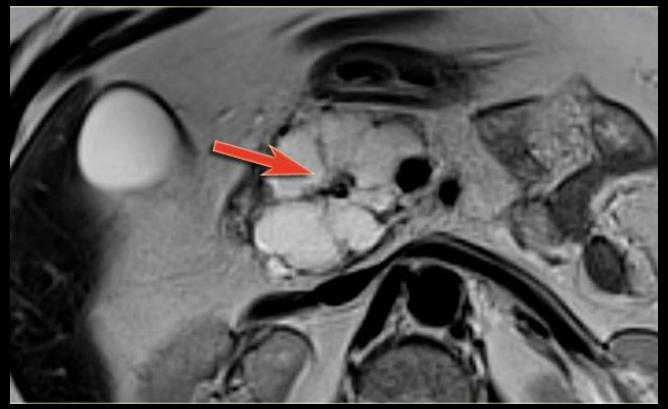
Common Pancreatic Lesions



Common Pancreatic Lesions

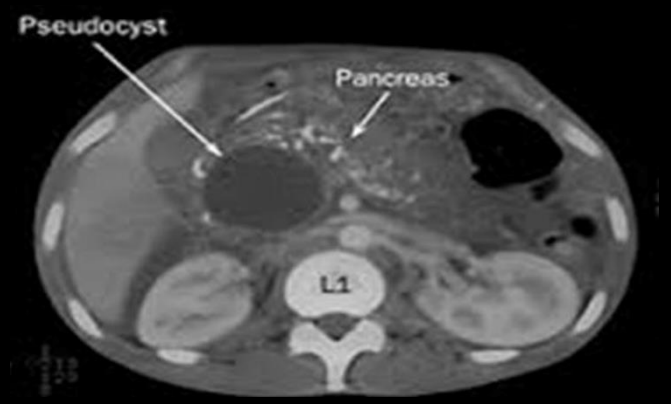


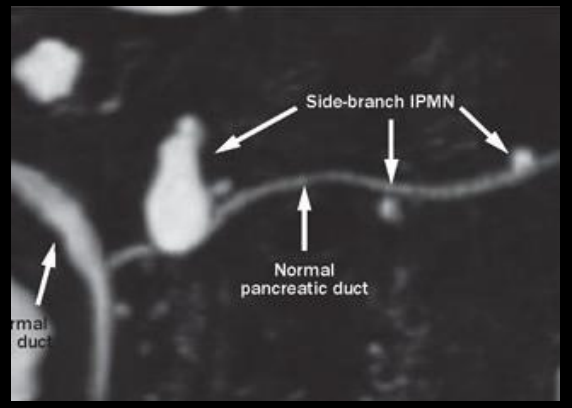


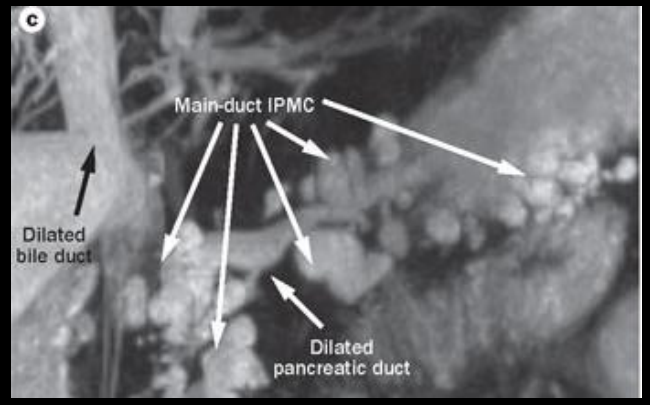


	SPN	MCN	SCN
Definition	Solid pseudopapillary	Mucinous cystic	Serous cystic
Age-group	"Daughter" ~3rd decade	"Mother" Middle aged	"Grandmother" ~7th decade
Benign/malignant	Low grade malignant	Pre-malignant	Mostly benign
Follow-up Scan	No	No	No
Refer to Surgeon	Yes – For resection	Yes – For resection	Yes – For discussion
Additional note	Good prognosis	Good prognosis	Good prognosis

Common Pancreatic Lesions







	Pseudocyst	**SB-IPMN**	**MD-IPMN**
Definition	Collection pancreatic fluid	Side branch IPMN	Main-duct IPMN
Age-group	No specific age group	M > F 5th-7th decade	M > F 5th-7th decade
Benign/malignant	Benign (cancer wise)	Benign	Pre-malignant
Follow-up Scan	Generally no…	Depends…	Yes
Refer to Surgeon	Yes – For review	Yes – For discussion +/- monitoring	Yes – For resection if fit
Additional note	Post-pancreatitis	-	-

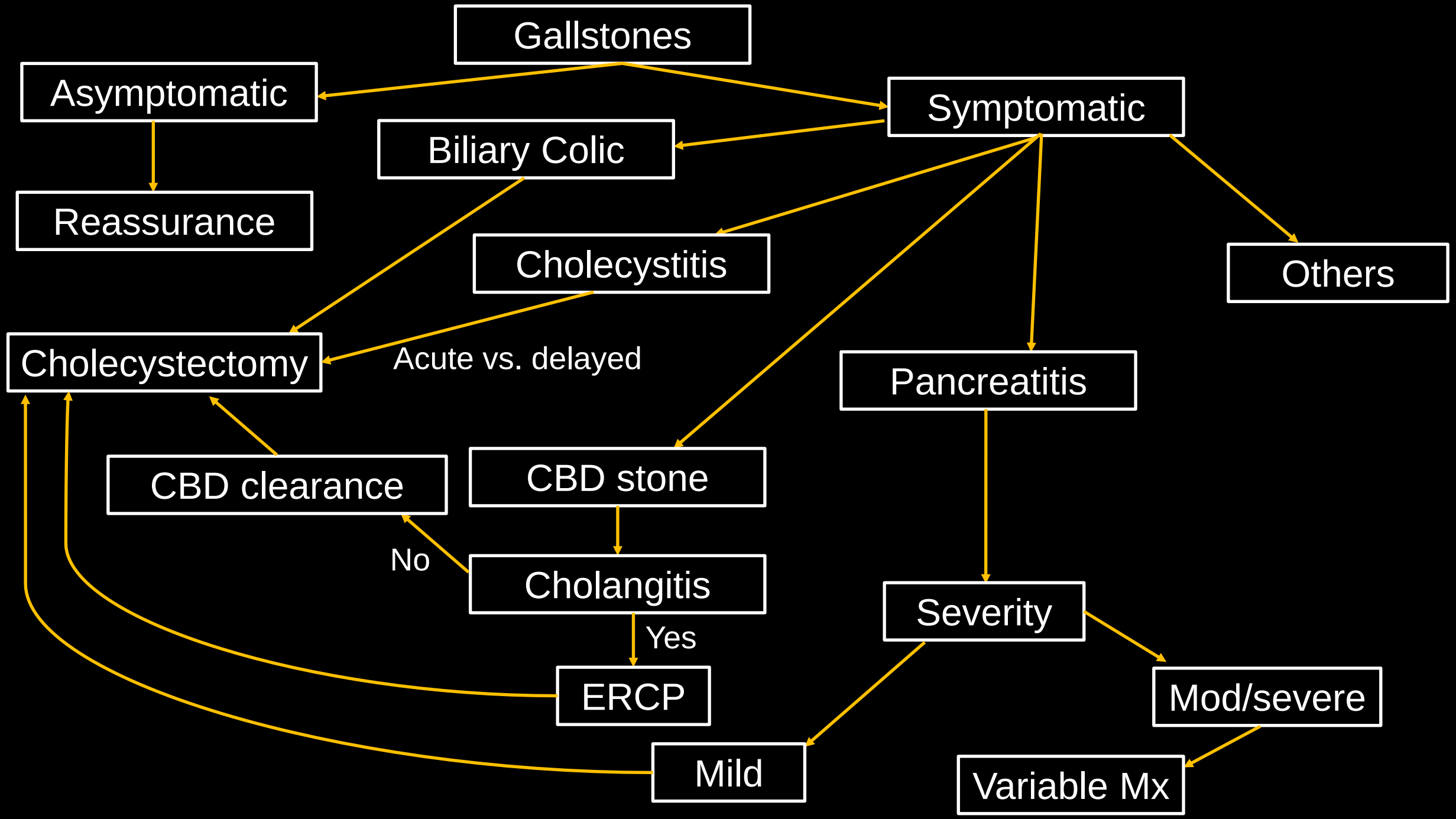
Post-Pancreatic Resection Follow-up

- Clinic follow-up 2-3 weeks post-op
  - Surgeon
  - Dietitian input is very important particularly post-Whipple's
- Yearly surgical follow-up
- Recovery is around 6 months for Whipple's…
  - Around 6-8 weeks for distal pancreatectomy
- Surveillance
  - CT scan after adjuvant therapy or at 6-12 months post-op
  - If secretor of CA19-9, 3-monthly CA19-9

Cholelithiasis and management

Cholelithiasis

- Key tests
  - Bilirubin (ALP/GGT to lesser extent), lipase
  - USS
    - Confirm gallstones, inflammation, CBD diameter
  - MRCP
    - Confirm CBD stone
  - ERCP (Therapeutic, not diagnostic tool)
  - EUS / HIDA
    - Look for microlithiasis & GB/biliary dyskinesia


Gallstones
Asymptomatic
Symptomatic
Biliary Colic
Reassurance
Cholecystitis
Others
Cholecystectomy
Acute vs. delayed
Pancreatitis
CBD clearance
CBD stone
No
Cholangitis
Severity
Yes
ERCP
Mod/severe
Mild
Variable Mx

Summary

- Liver and pancreatic lesions
  - Generally, diagnosis made on imaging alone
    - CT liver or pancreas usually adequate
    - MRI for further characterisation
  - Tissue diagnosis only in certain cases
    - After review by HPB surgeon
- Cholelithiasis
  - Usually straight-forward management
  - Deranged LFTs / mod-severe pancreatitis are outliers
- If any doubt/questions, happy to provide advice