

Cystic Lesions Pancreas

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Background

- Pancreatic cysts are diagnosed with increasing frequency because of the widespread use of cross-sectional imaging
- Undefined Pancreatic Cystic Neoplasms in General population 2.6-15%
- Inability to determine Histopathological diagnosis without excision
- Majority will never need Histopathological diagnosis
- Many PCNs harbor potential for malignancy



Types of Cystic Lesions

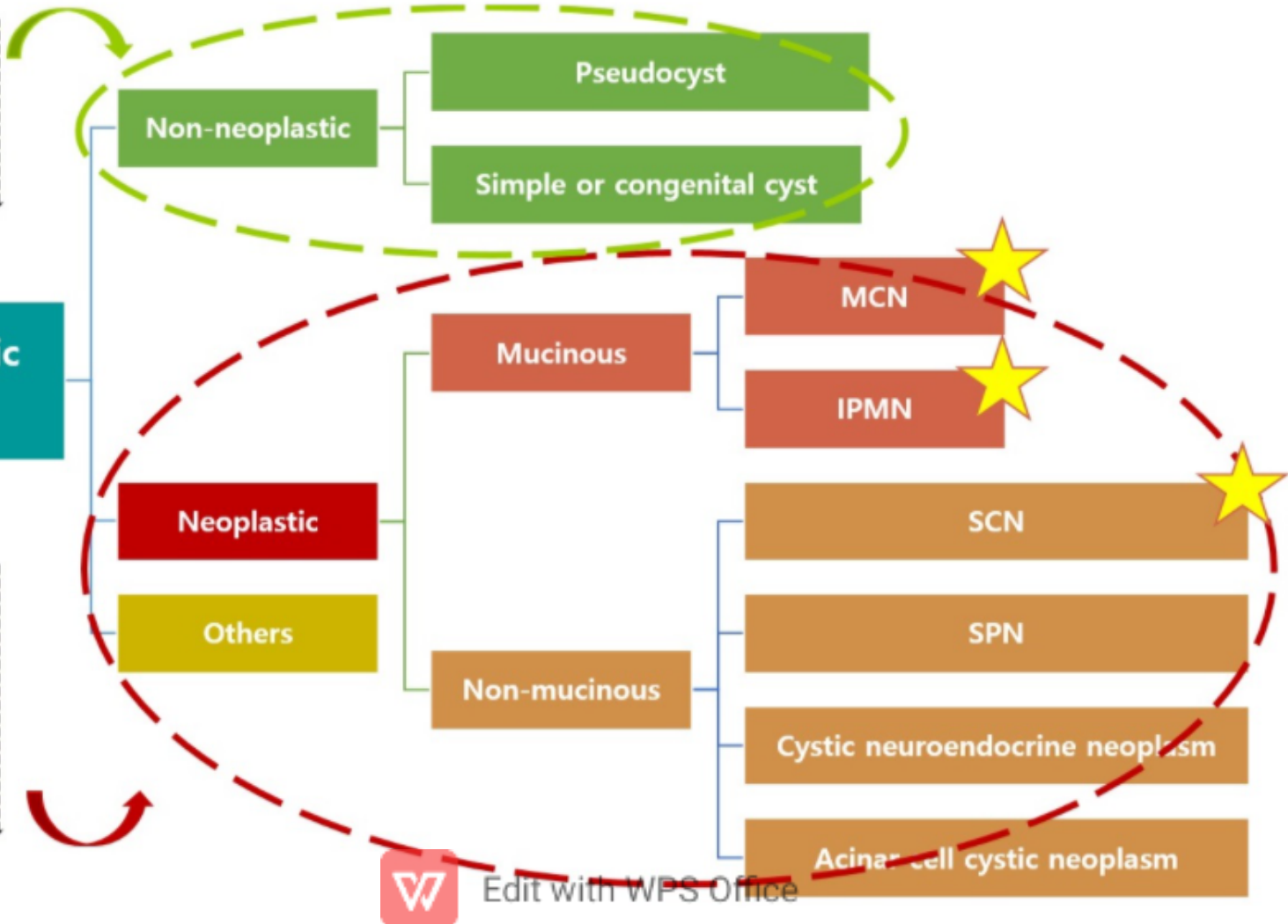
- Inflammatory fluid collections- Pseudocyst
- Pancreatic cystic neoplasms (PCNs)
- Non-neoplastic pancreatic cysts-
 - True cysts,
 - Retention cysts
 - Mucinous non-neoplastic cysts
 - Lymphoepithelial cysts
- Solid pancreatic tumors as a pancreatic cyst (eg, PNET)



- History of pancreatitis?
- Cysts with non-enhancing debris?

Pancreatic cystic lesions

- No history of pancreatitis or trauma?
- Cyst with internal septa, solid component, central scar or wall calcification?



Cystic Neoplasm of Pancreas

- Serous neoplasms
- Mucinous cystic neoplasms (MCNs)
- Intraductal papillary mucinous neoplasms (IPMNs)
- Solid pseudopapillary neoplasms (SPNs)



Demographics and clinical features

	SCN	MCN	IPMN		
			Side-branch	Main - Duct	Mixed
Sex	F > M	F > M		F ≈ M	
Age (decade)	6-7th	4-5th		6-7th	
Symptoms	50% (+++large tumors)	50%	Yes (except when small)		
Malignant potential	Very rare	Yes (low if 40mm)	Yes (+++ low)	Yes (+++ high)	Yes (+++ high)

Clinical features

- Symptomatic PCNs 44-80%
 - Obstructive Jaundice
 - Pancreatitis
- Indication for Surgery



Accuracy /Preference of MRI and CT

- Accuracy of MRI 40-95%
- Accuracy of CT 40-81%
- MRI is preferred



MRI/MRCP Advantages

- More sensitive in identifying Communication with PD
- Identifying Mural nodule/septations
- Identifying Single or multiple PCN



When CT scores?

- Detecting Calcification- Pseudocyst associated with CP from PCN
- Suspicious Malignant PCN-assessment of Vascular involvement, Metastasis
- Suspicion of Post op recurrence of Pancreatic Cancer



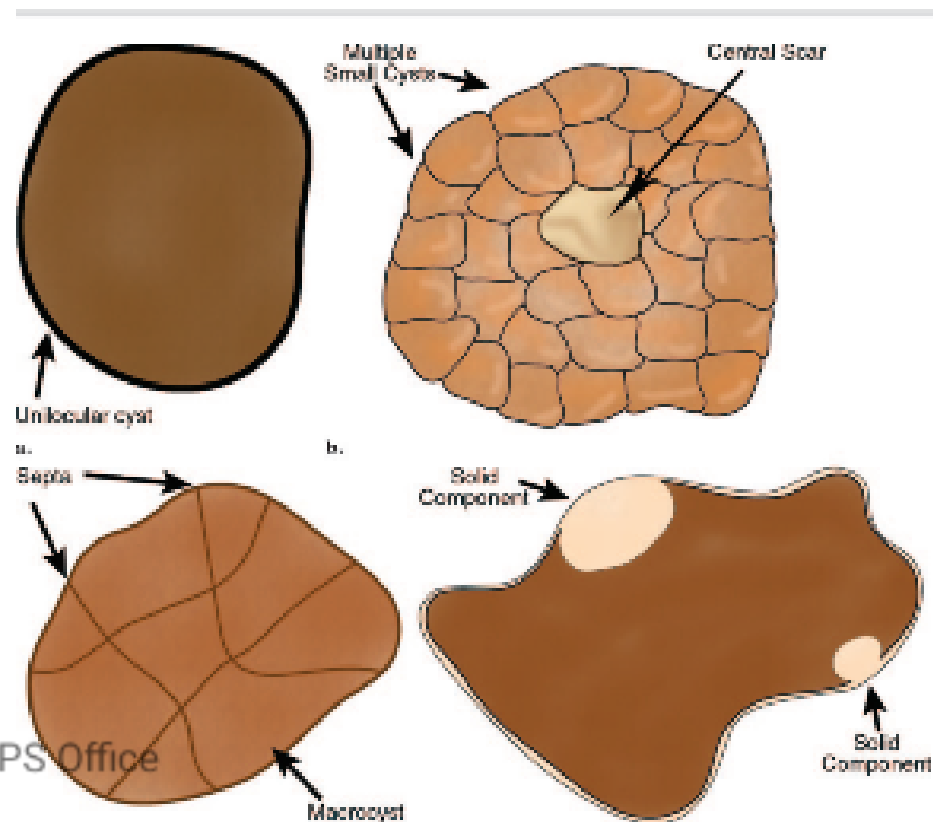
EUS in PCN

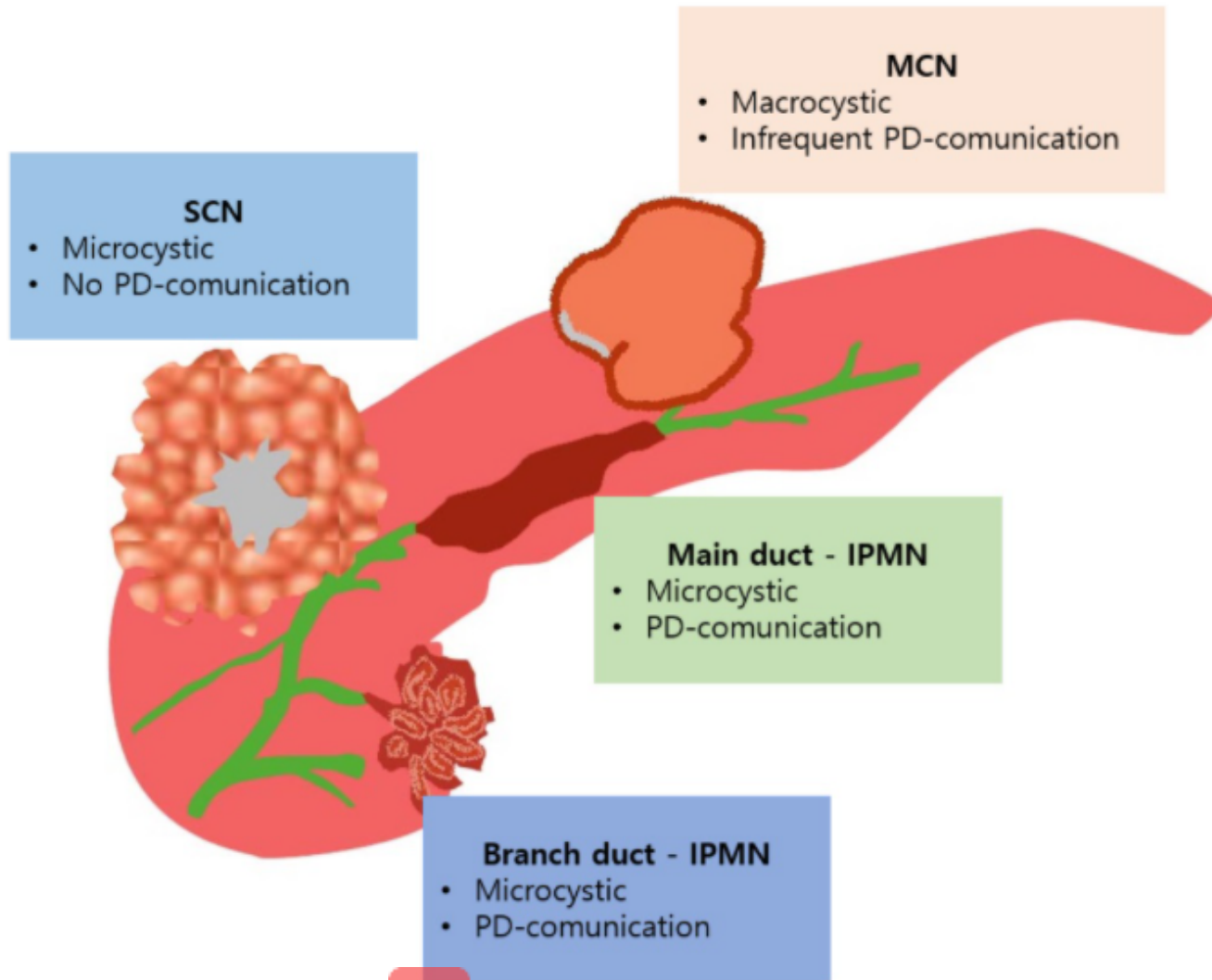
- Adjunct to other imaging
- Second line examination in addition to CT/MRI
- Radiological diagnosis is not conclusive and/or PCN has clinical or radiological features of concern
- CE-EUS in Mural nodule or solid components

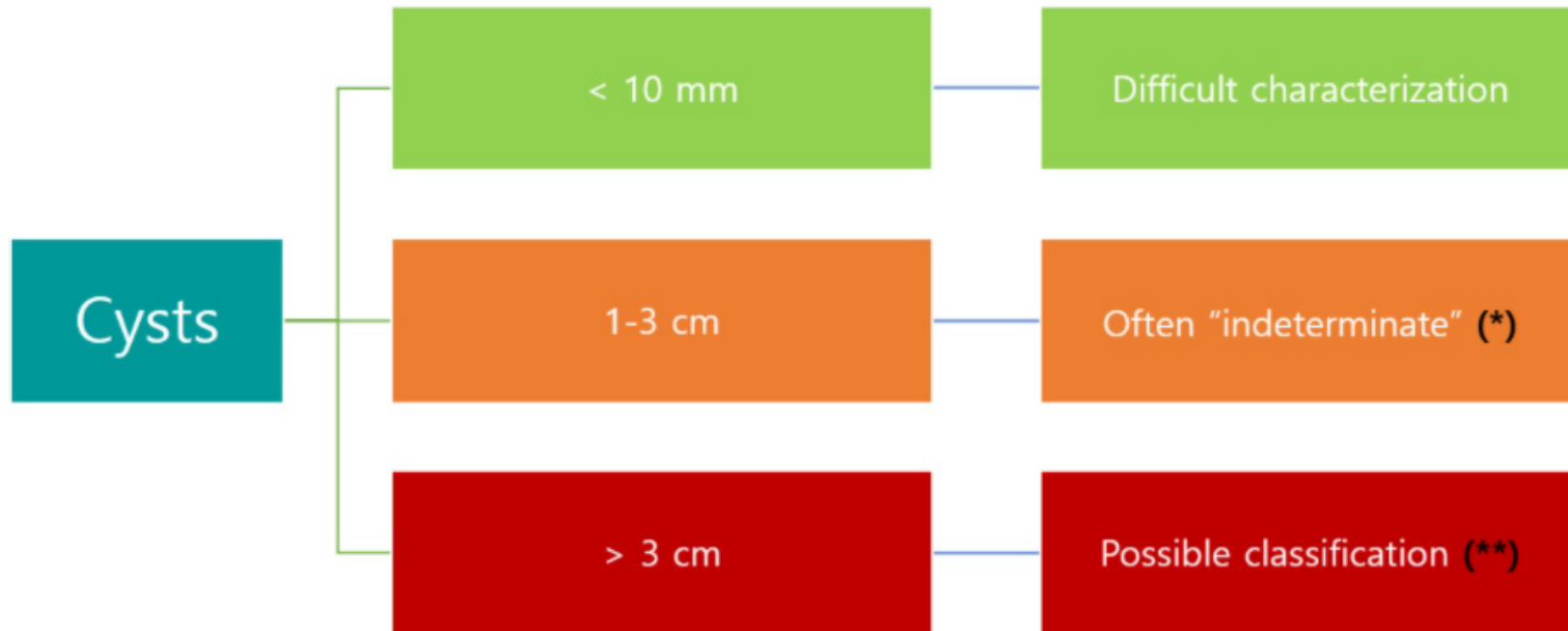


Radiological Features of PCNs

- Size/Unilocular/Multilocular
- Rate of progression
- Mural Nodules/Solid component
- Dilatation of MPD







Size

- ≥ 30 mm - worrisome feature(IAP,ACG)
- ≥ 40 mm –RI for surgery(European Guidelines) } MCN, IPMN
- SCN size does not matter surgery only for symptomatic
- SPT Resection always advocated
- Rapid growth rate > 2.7 mm/year High risk of malignancy



Mural Nodules or Solid Component

- Strongest Predictors of Malignancy
- Enhancing MNs ≥ 5 mm Indication for surgery
- CE EUS second imaging of choice



MPD

- >1cm Absolute Indication for surgery in IPMN
- 5-10mm Relative Indication



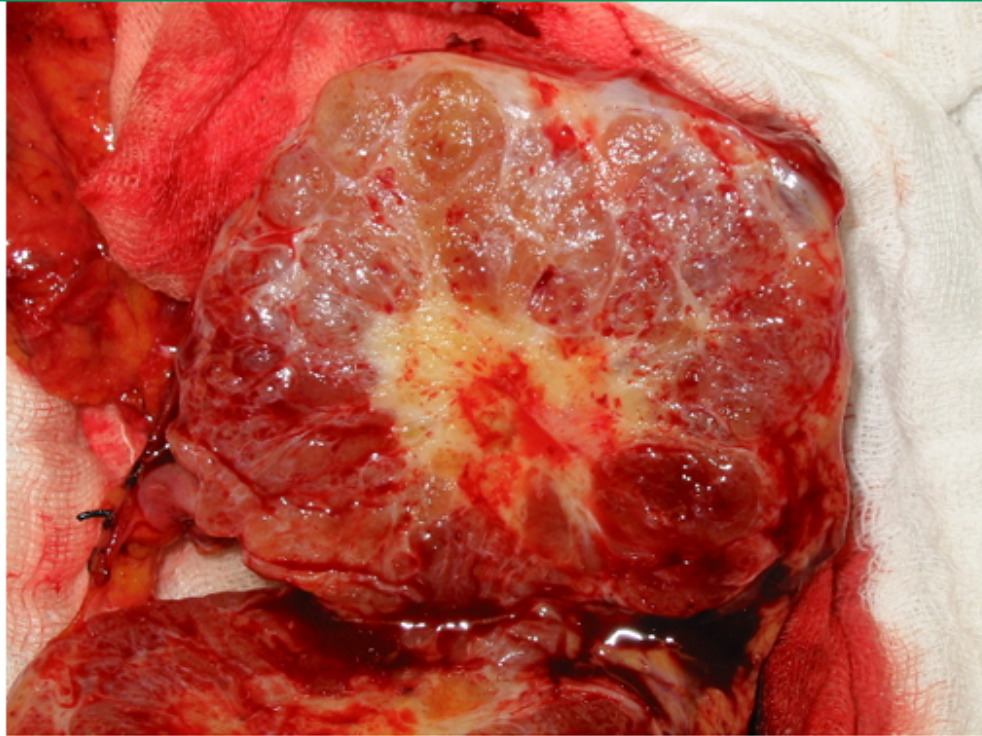
Cytology/Biomarkers

- Mucinous Vs Non mucinous
- Benign Vs malignant
- Cystic Fluid CEA,Lipase, Cytology

- Cytology specific but low sensitivity so it should be combined with EUS morphology
- CEA ≥ 192 ng/ml Mucinous PCN
- Differentiation between MCN Vs IPMN not possible with CEA/ cytology
- KRAS mutation –Mucinous PCN



Gross appearance of pancreatic serous cystadenoma

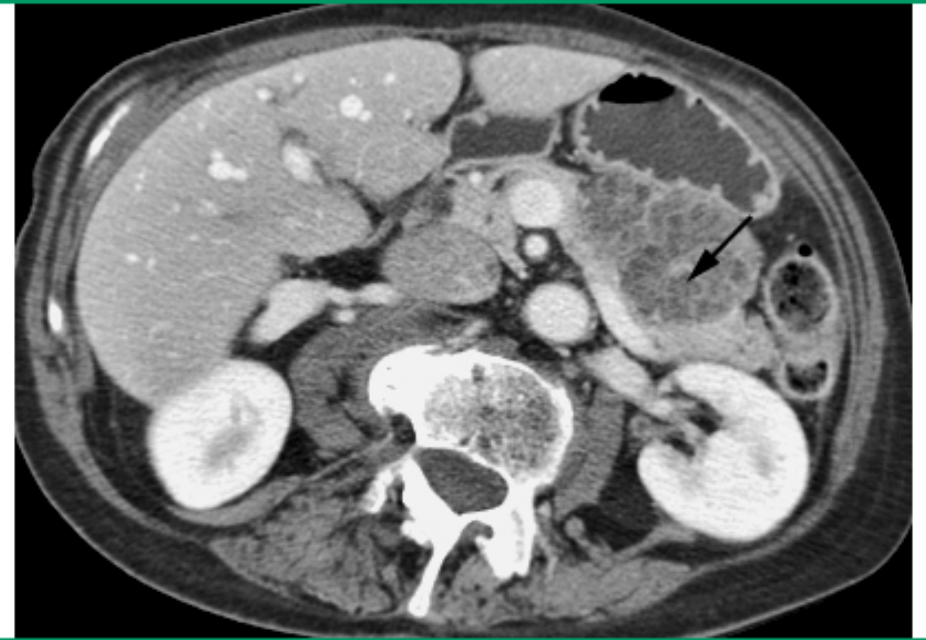


Gross appearance of pancreatic serous cystadenoma. Note central stellate scar.

Courtesy of Michael L Steer, MD.

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Pancreatic serous cystadenoma



CT showing a serous cystadenoma of the pancreas. Note central calcification of stellate scar (arrow).

CT: computed tomography.

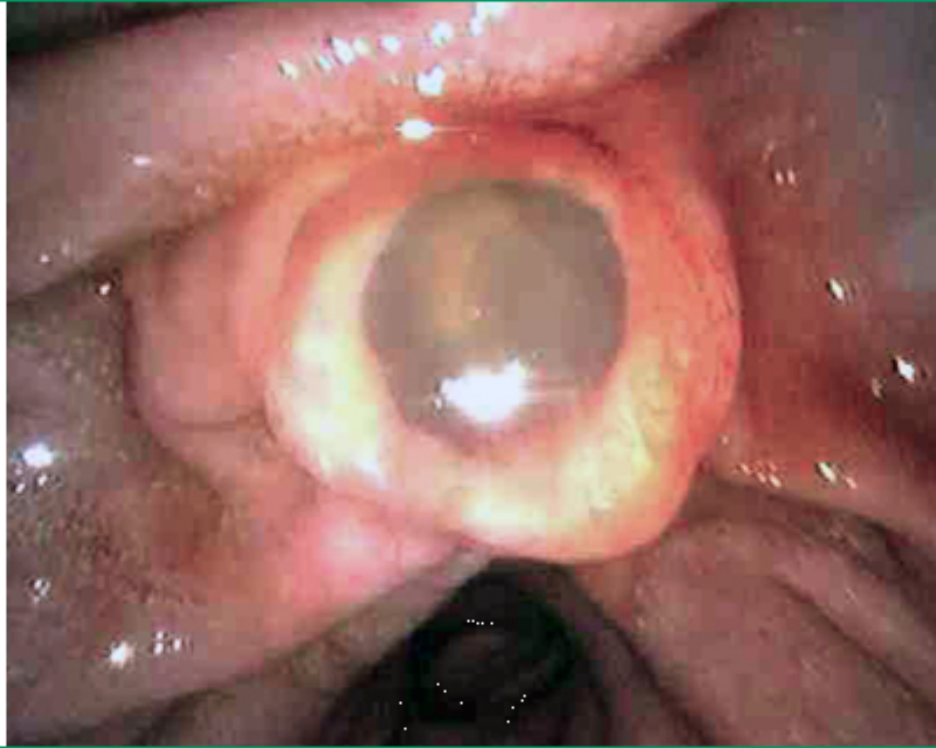
Courtesy of Kevin McGrath, MD.

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Papilla extruding mucus in a patient with IPMN



A gaping papilla extruding mucus, pathognomonic of main-duct intraductal papillary mucinous neoplasm.

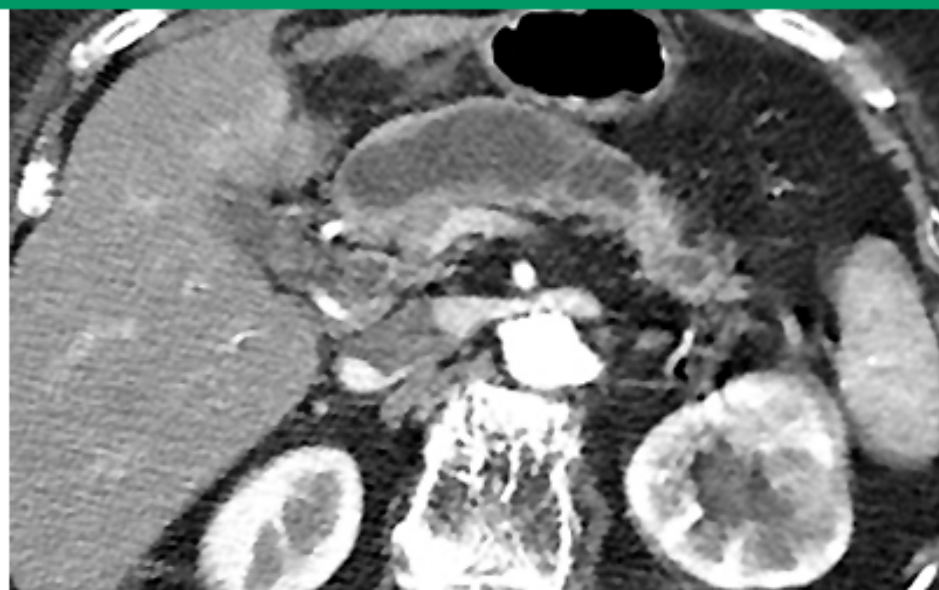
Courtesy of Kevin McGrath, MD, and Asif Khalid, MD.

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Computed tomography of intraductal papillary mucinous neoplasm with parenchymal atrophy



CT scan of main duct intraductal papillary mucinous neoplasm, revealing a markedly dilated pancreatic duct with parenchymal atrophy.

CT: computed tomography.

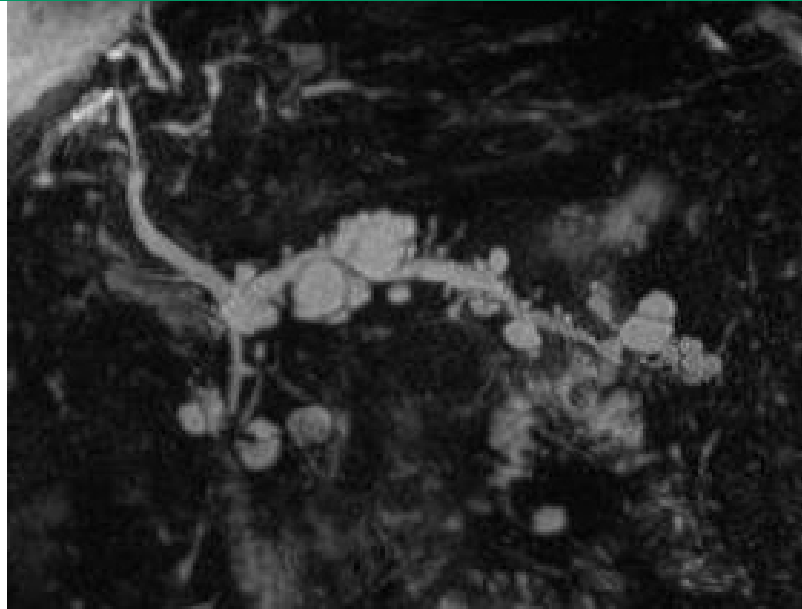
Courtesy of Kevin McGrath, MD, and Asif Khalid, MD.

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Mixed-type intraductal papillary mucinous neoplasm of the pancreas



Magnetic resonance cholangiopancreatography revealing mixed-type intraductal papillary mucinous neoplasm. There are multiple dilated branch ducts and a moderately dilated main pancreatic duct in the pancreatic body region.

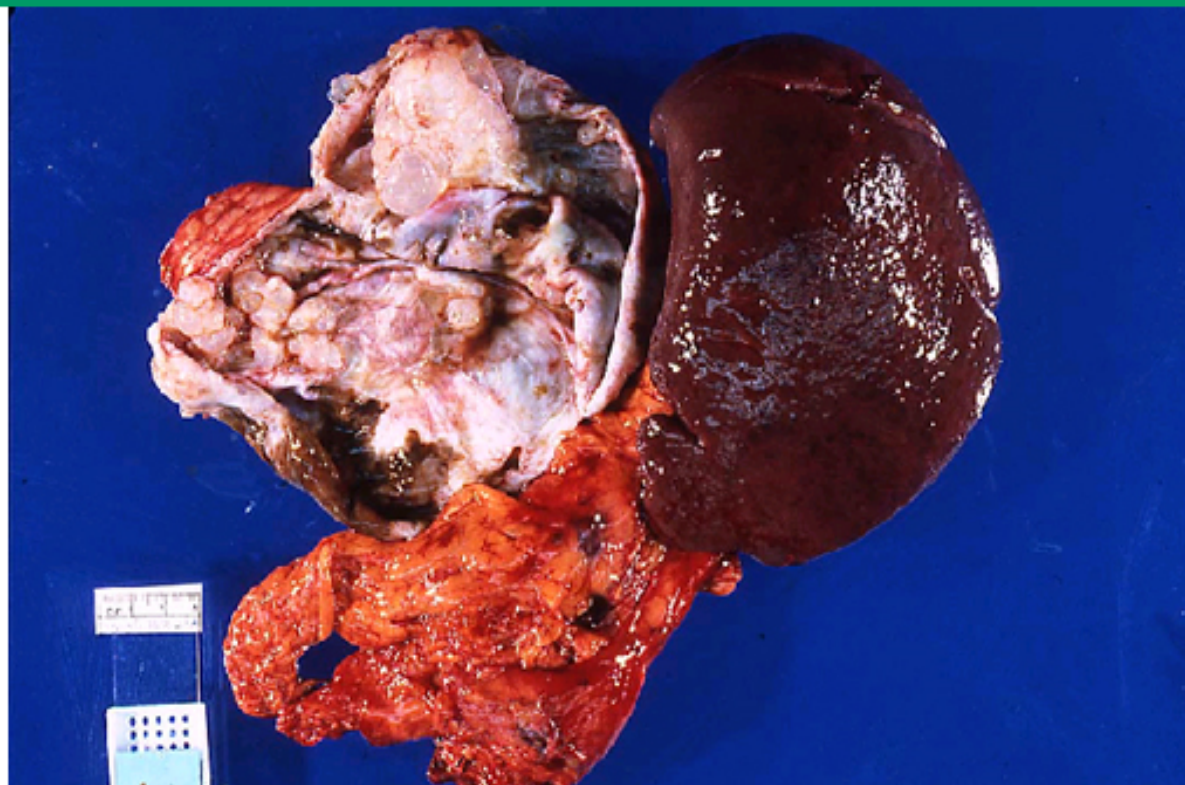
Courtesy of Kevin McGrath, MD.



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Pancreatic mucinous cystadenoma



Gross appearance of a mucinous cystadenoma of the pancreas and attached spleen.

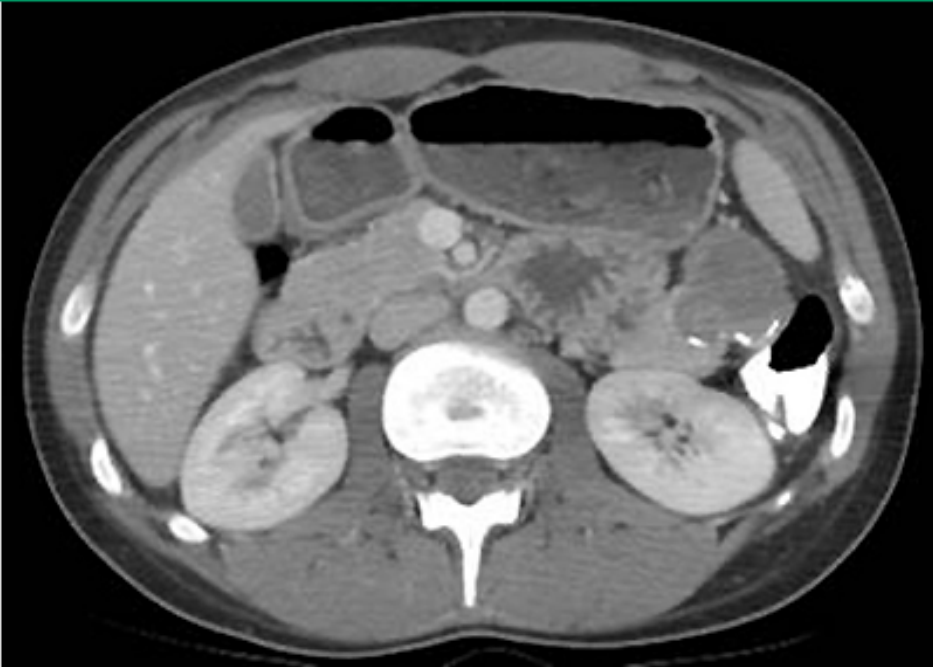
Courtesy of Michael L Steer, MD.

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Solid pseudopapillary neoplasm of the pancreas

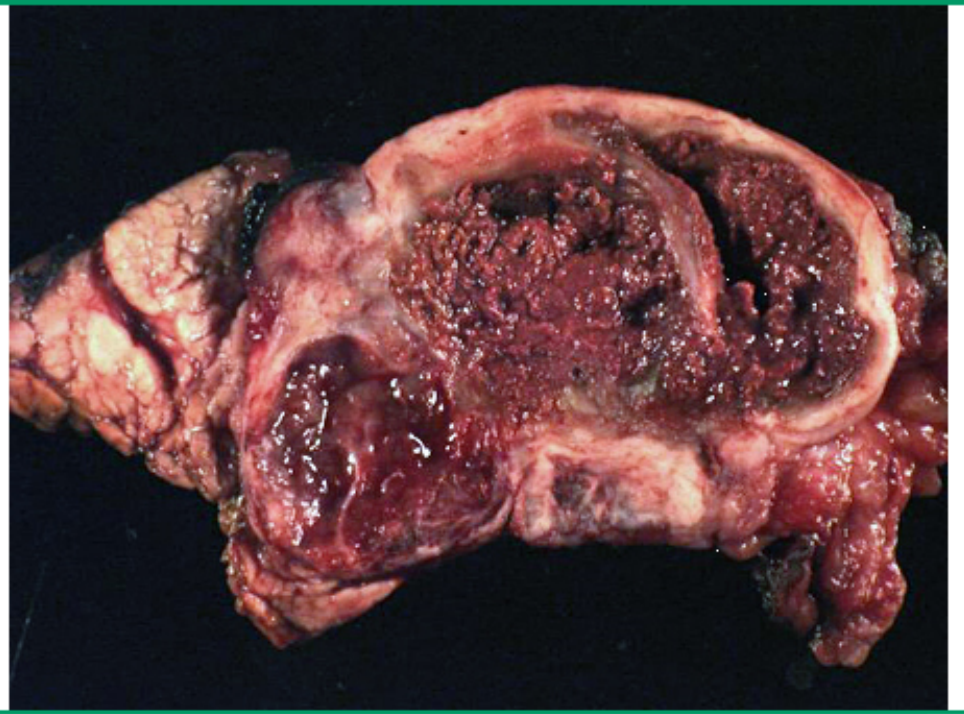


Incidental finding of a 4 cm solid pseudopapillary neoplasm with peripheral calcification in the pancreatic tail of a young woman.

Courtesy of Kevin McGrath, MD, and Asif Khalid, MD.

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Gross image of pseudopapillary neoplasm of the pancreas



Corresponding gross image of the solid pseudopapillary neoplasm depicted in Radiograph 5.

Courtesy of Kevin McGrath, MD, and Asif Khalid, MD.

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High Risk Variables in PCN

Symptoms

- Jaundice
- Pancreatitis

Imaging

- MPD >10 mm
- Mural Nodule > 5 mm
- Cyst Size >3-4 cm

Serum

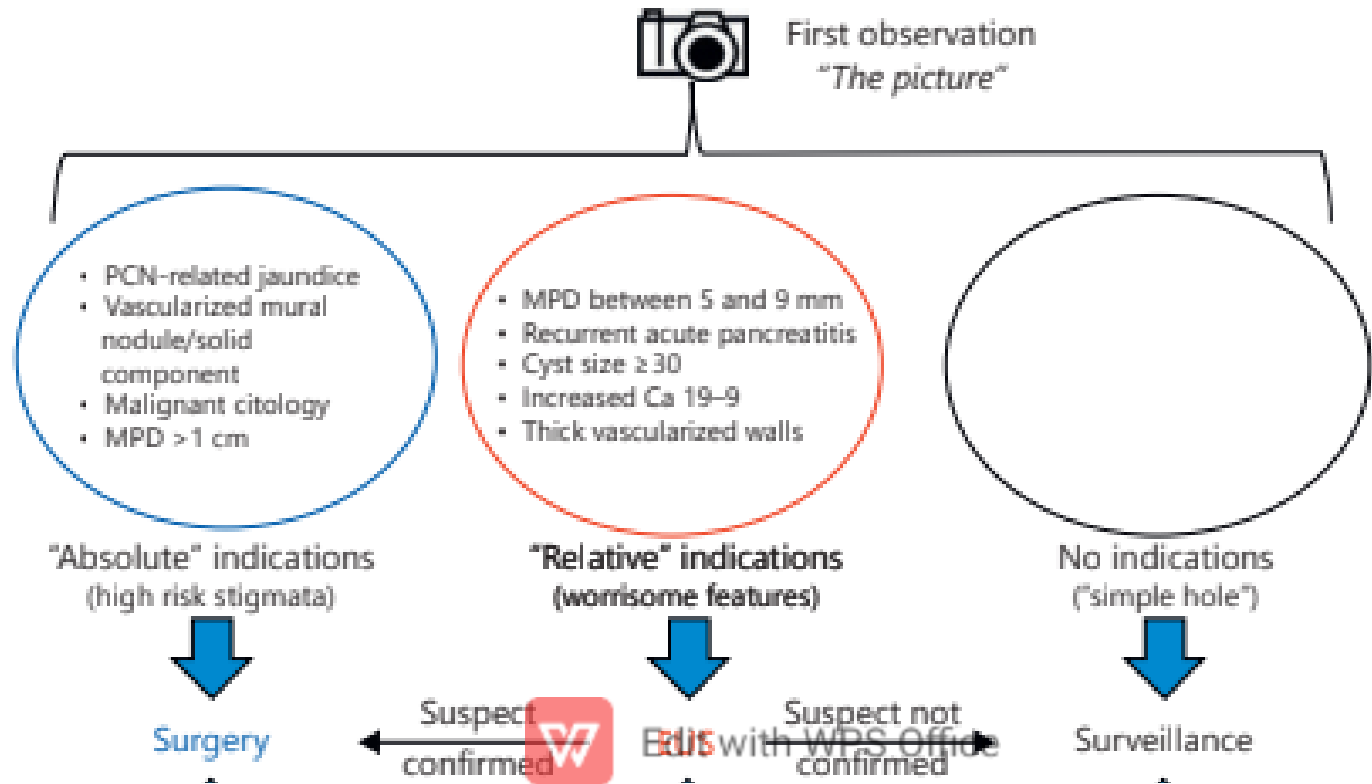
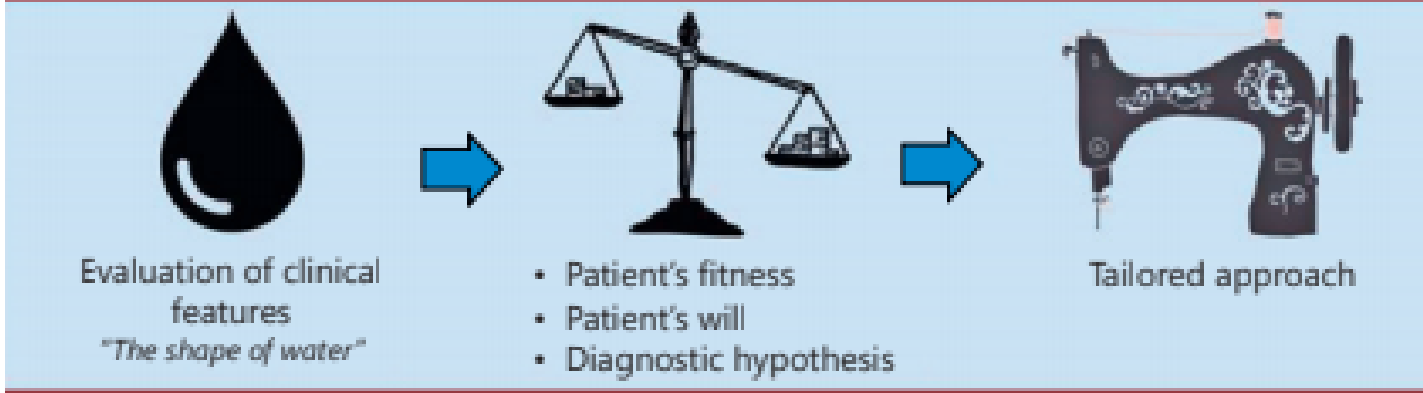
- CA 199
- New onset DM

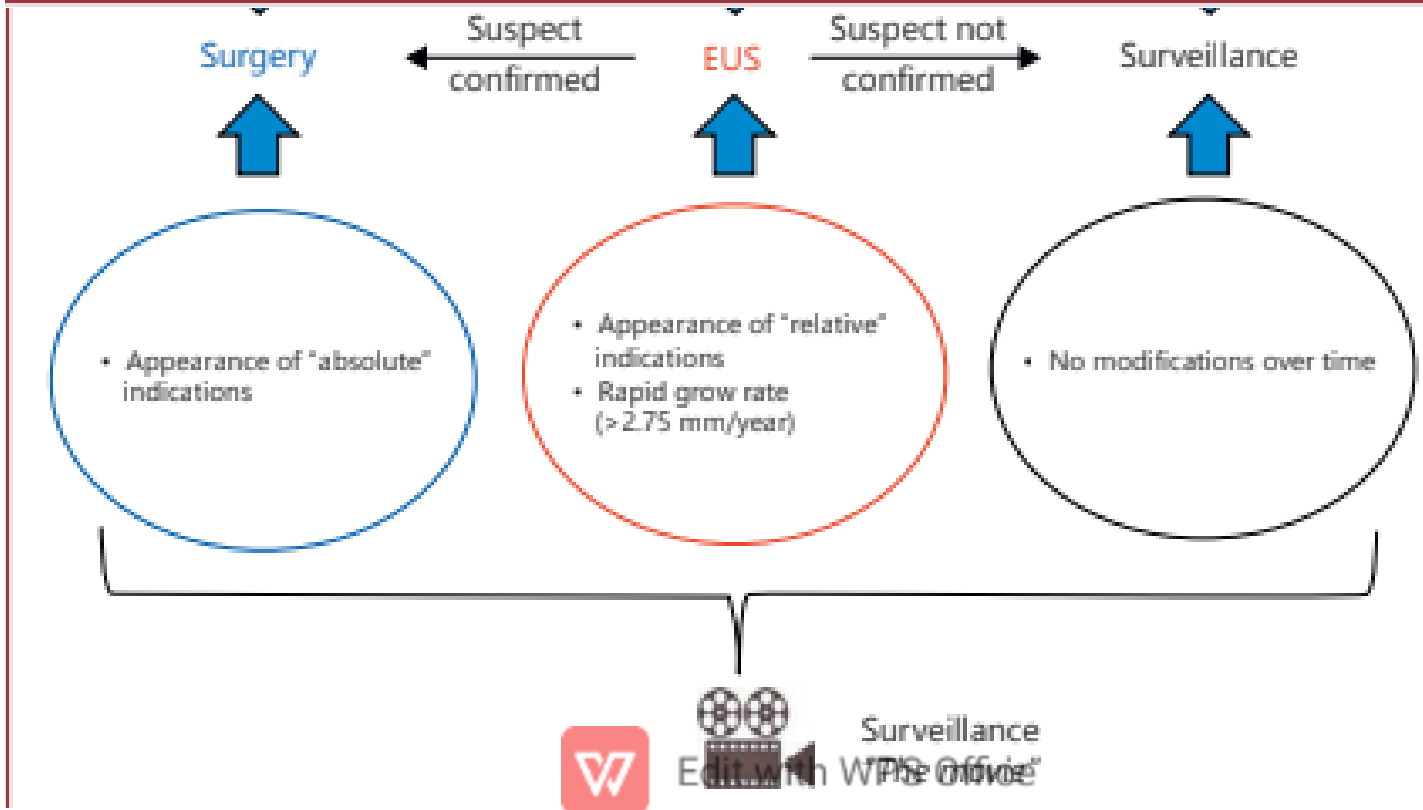
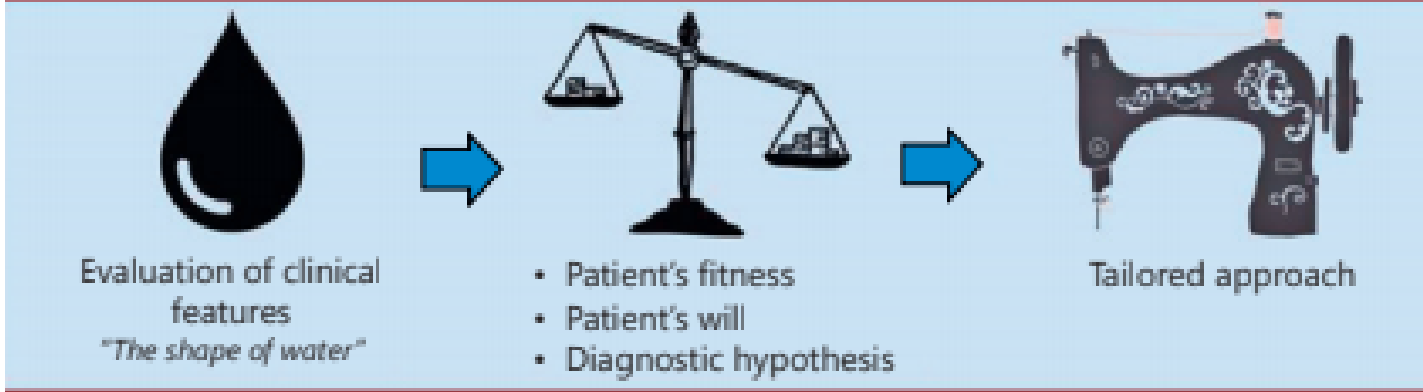


Uncommon and Undefined Cystic tumours

- Size <15mm Either cross sectional imaging or EUS alone may be sufficient
- > 15 mm/diagnosis unclear Both Cross sectional imaging and EUS/FNA







Cases



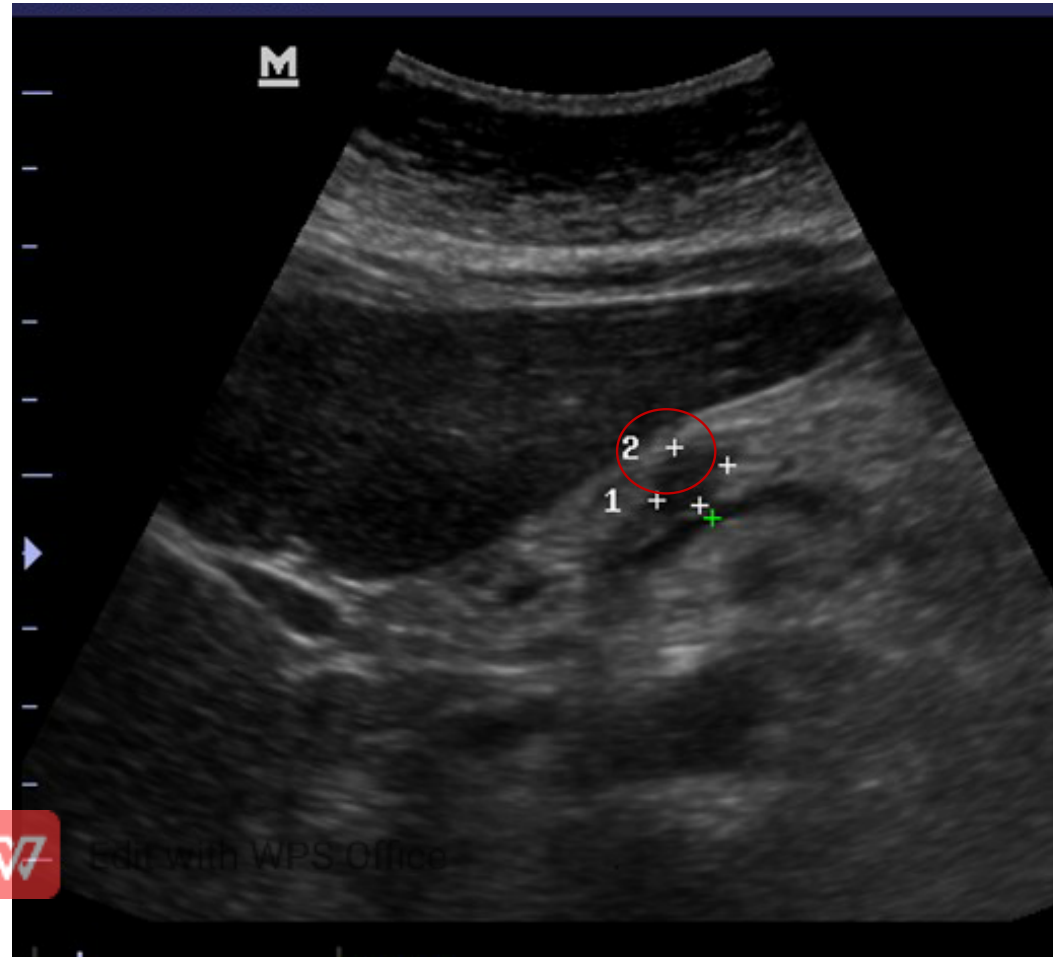
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Pancreatic cystic lesions

USG abdomen

Asymptomatic

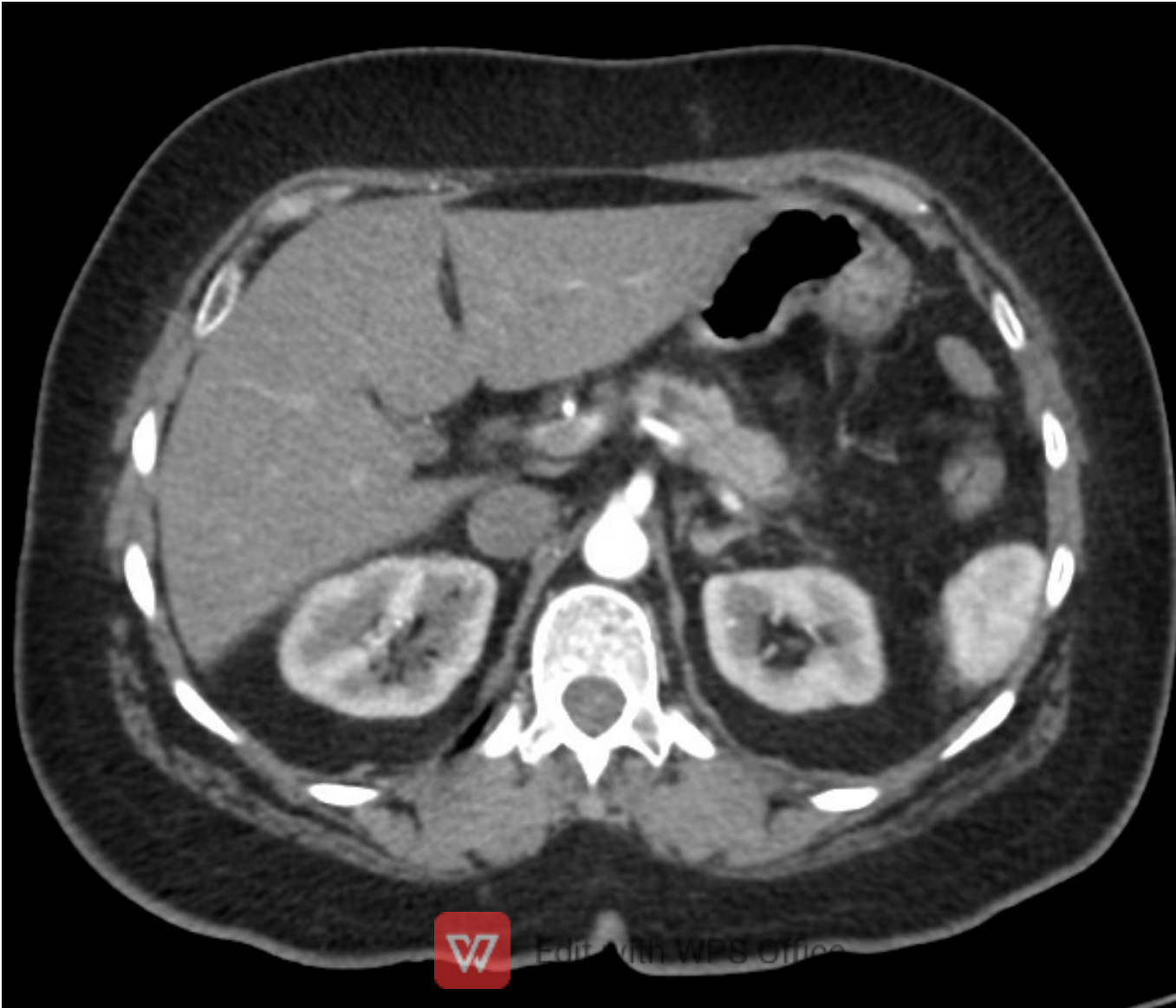
- 60 years old lady
- Master health check up



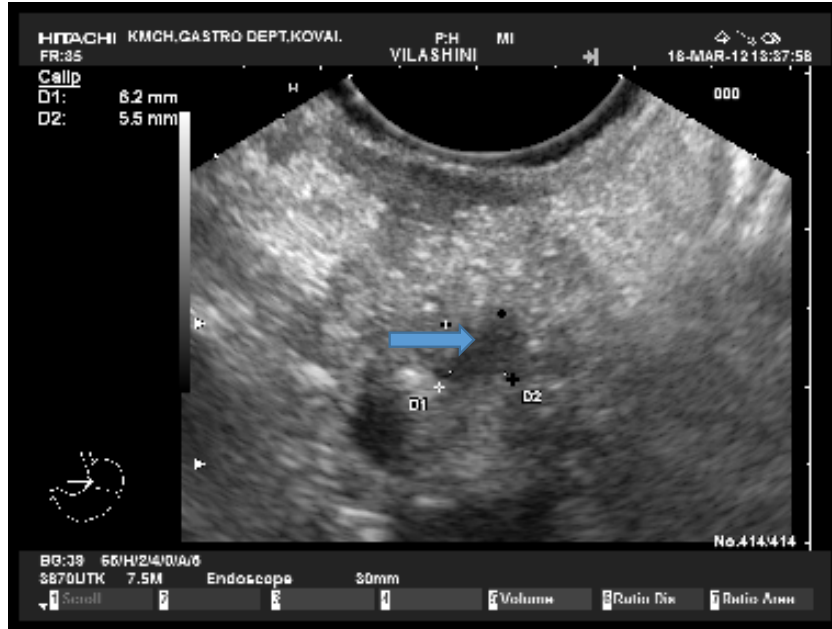
CT abdomen

- Well defined, poorly enhancing lesion, size < 1 cms, in body of pancreas, distal MPD slightly dilated (3 mm)





EUS



6.2 x 5.5 mm sized
cystic lesion in proximal
body

Hypoechoic lesion
adjacent to the cyst



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EUS FNA

Cyst Fluid

- CEA- 485 ng/ml

Cytology

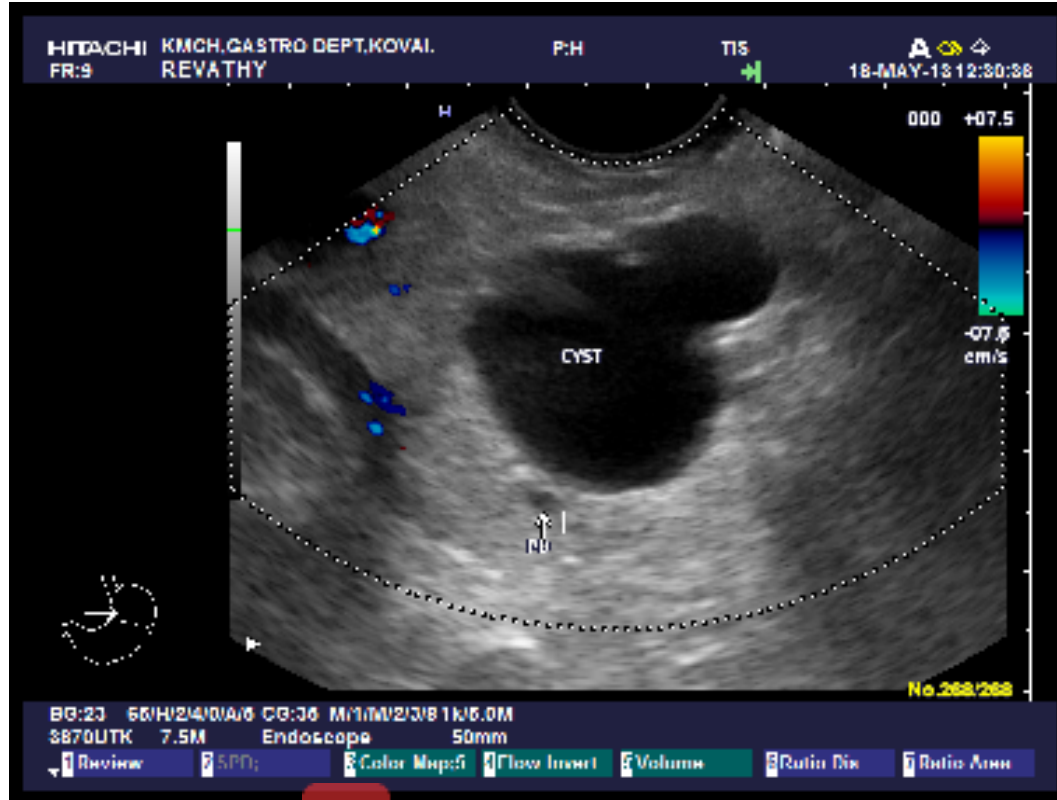
- Cuboidal ductal cells with myxoid stroma

Final diagnosis- Branch duct IPMN (Intraductal papillary mucinous neoplasm)

Need Surveillance once in 6 months in First year then Yearly

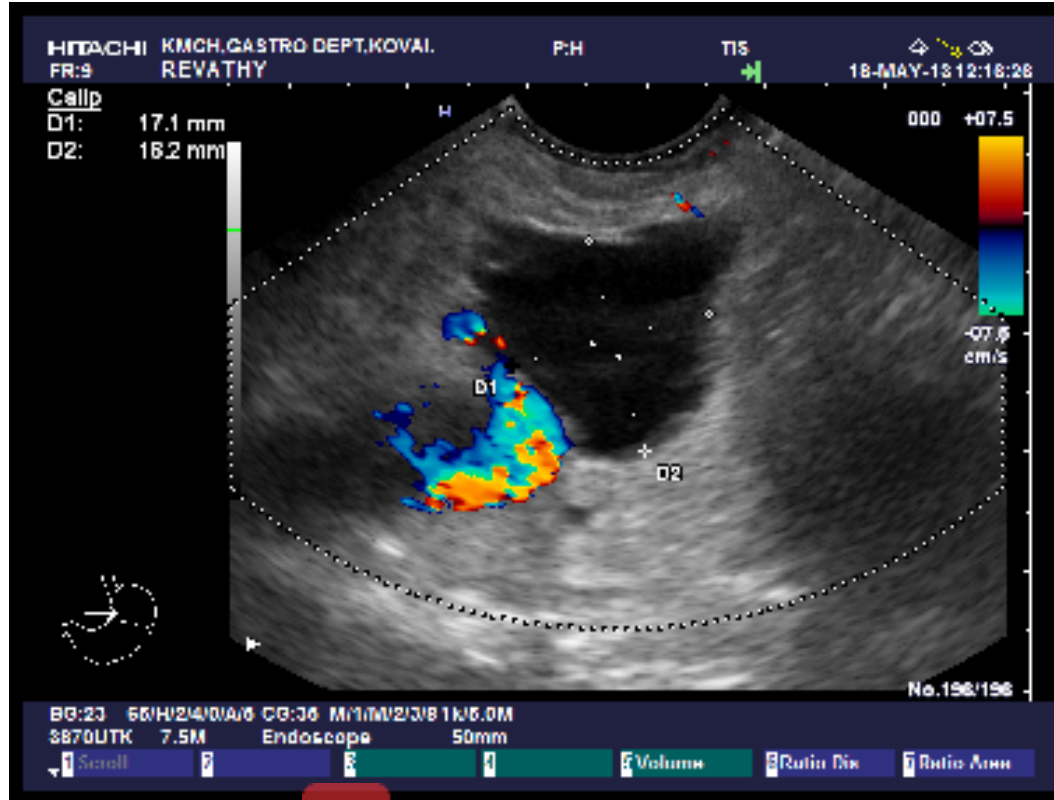


40/F, Asymptomatic Cyst



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No High risk features/ < 3 cm
No need to needle Here
Follow up



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Pseudocyst- Symptomatic Post Acute Pancreatitis



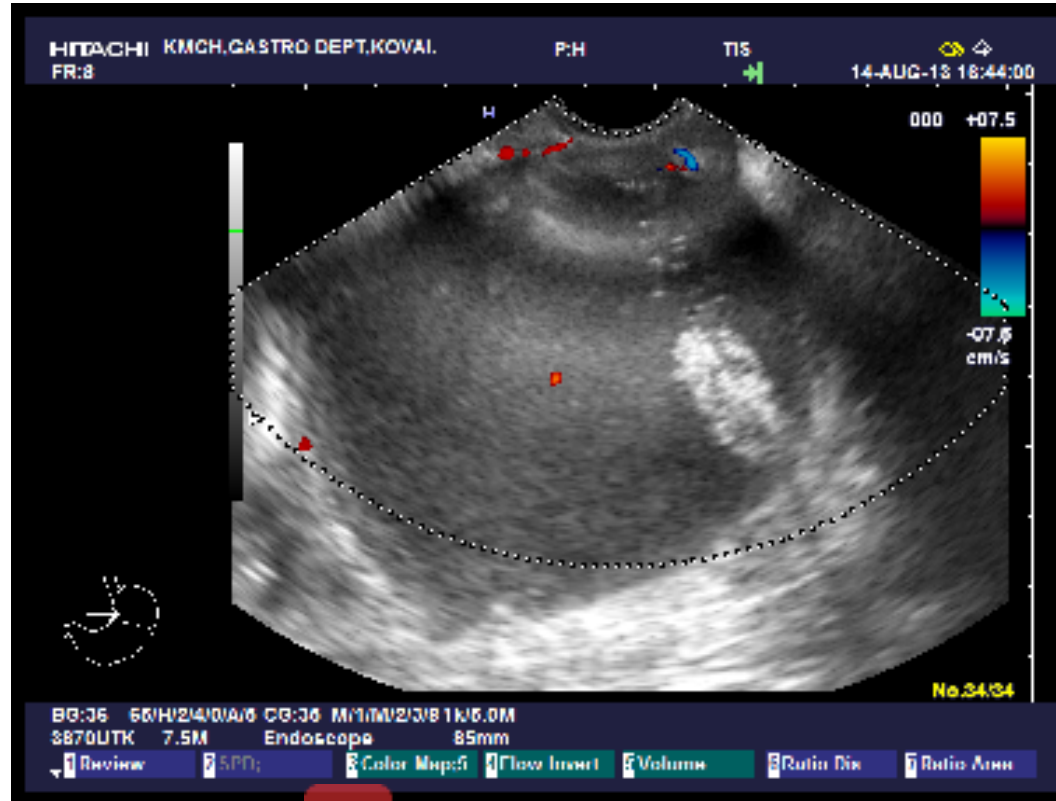
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Pseudocyst Punctured



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For Cysto Gastrostomy

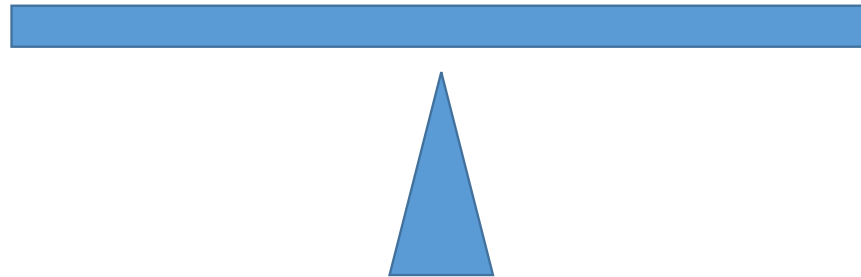


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Summary- PCN

Clinical Features
Imaging
Risk Factors/Fitness

Surgery
Surveillance
No Follow up



Aknowledgement

- Dr Aravind, Consultant Gastroenterologist, KMCH



References

- Pancreatic cystic neoplasms: Clinical manifestations, diagnosis, and management. Asif Khalid et al, Uptodate, Jul 13, 2020.
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Thank You!



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