Pancreatic cyst seen on imaging (CT/MRI)

**There is some "high risk stigmata"?:**
**- Obstrutive jaudice in a patient with cystic lesion of the head of the pancreas**
**- Main pancreatic duct >= 10 mm**
**- enhancing mural node >= 5mm**

Yes

Refer to surgery/ multidisciplinary group** and consider EUS +- FNA

No

**Are any of the "worrisome features" present?:**
**- Cyst > 3 cm**
**- enhancing mural nodule <5mm**
**- Thickened/enhancing cyst walls**
**-Main duct size 5-9mm**
**- Abrupt change in caliber os pancreatic duct with distal pancreatic atrophy**
**- lymphadenopathy**
**- increased serum level of CA 19-9**
**- Cyst growth rate >= 5mm/2y**

No

What is the size of the largest cyst?

Yes

EUS +- FNA

**Is there:**
**- Main duct with thickened walls, intraductal mucin or mural nodules?**
**- Definite mural nodule(s) >= 5mm?**
**- Cytology suspicious or with high-grade dysplasia or pancreatic cancer?**

No/ inconclusive

What is the size of the largest cyst?

Yes

Refer to surgery/ multidisciplinary group **

Definitive diagnosis

**Serous cystic neoplasm or VHL mutation**

- Surgical resection if symptomatic or impossibility of excluding malignancy;
- Consider surgery if: head lesion, tumour >= 4-6cm, suspected malignancy or doubtful diagnosis* ;
- Surveillance if asymptomatic and absence of signs of malignancy, while surgical candidate

**Mucinous cystic neoplasm**

- Surgical resection in all surgical candidates *

Mucosal ablation with EUS-guided ethanol injection (+-paclitaxel) is an option in non-surgical candidates with a potentially malignant or symptomatic lesion

**Solid pseudopapillary neoplasm**

- Surgical resection in all surgical candidates *
- Even patients with metastatic disease, resection (surgical debulking) increases patient survival

**Cystic pancreatic endocrine neoplasia**

- Surgical resection* if symptomatic and/or tumor >= 1cm
- Surgical resection* or surveillance if asymptomatic and tumor < 1cm

**Pancreatic ductal adenocarcinoma with cystic degeneration**

- Surgical resection*: similar approach to other pancreatic adenocarcinomas

**Intraductal papillary mucinous neoplasm (IPMN)**

**Main duct IPMN**

- Surgical resection* in all fit patients if: jaundice, mural nodule or MPD> = 10 mm
- Consider surveillance / additional evaluation / surgical resection if MPD 5-9mm (not a direct surgical indication)
- Elderly patients with low performance status vigilance should be considered
- Possibility of extra-pancreatic neoplasms

**Branch duct IPMN**

There is some "high risk stigmata"?

**YES** → Refer to surgery or consider EUS +- FNA

**NO**

There is some "worrisome feature"?

**YES**

EUS-PAAF

Is there any of these characteristics in the EUS-PAAF?
- definitive wall nodule >= 5 mm
- suspected MPD involvement
- cytology: suspected or positive for malignancy

**YES** → Refer to surgery

**NO** → What is the size of the largest cyst?

**NO** ← There is some "worrisome feature"?

Probable pseudocyst? → Follow clinically

Concern for cystic neoplasm as a cause for a acute pancreatitis? → EUS +- FNA and consider referral to a multidisciplinary group

Is there a history of pancreatitis?

No → Are any of the "worrisome features" present?

Yes → Probable pseudocyst? / Concern for cystic neoplasm as a cause for a acute pancreatitis?

What is the size of the largest cyst?

| < 1cm | 1-2 cm | 2-3 cm | > 3 cm |
|---|---|---|---|
| CT/MRI in 6 months, then every 2 years if no change | CT/MRI :<br>- 6months x 1Year<br>- Yearly x 2Years<br>- Then 2-2years interval | - EUS in 3-6 months<br>- Then lengthen interval up to 1year, alternating MRI with EUS as apropriate<br>- Consider surgery in young fit patients with need for prolonged surveillance | - Close surveillance alternating MRI and EUS every 3-6 months<br><br>- Strongly consider surgery in young fit patients |
| Consider stop surveillance after 10 years of surveillance or patient >= 80 years old | Consider stop surveillance after 10 years of surveillance or patient >= 80 years old | STOP surveillance when patient didn´t fit for surgery | STOP surveillance when patient didn´t fit for surgery |

+ Ca 19-9

* The decision to recommend surgery should take into account not only the specific type of cystic lesion, but also factors such as age, performance status, comorbidities (Charlson Comorbidity Index), malignant potential of the lesion, degree of suspicion of malignancy and patient opinion

** Surveillance after surgery:
- Patient with invasive cancer or high-grade dysplasia in a cyst that has been surgically resected should undergo MRI surveillance of any remaining pancreas every 2 years
- If there is no family history of pancreatic cancer and no mixed and main IPMN, we sugest against routine surveillance of the remaining pancreas if no high-grade dysplasia or malignancy at surgical ressection
- STOP surveillance when patient didn´t fit for surgery