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Case 7179
Pancreatic Mucinous Cystadenoma

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Section: Liver, Biliary System, Pancreas, Spleen
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Patient: 46 year(s), female

Clinical Summary

A pancreatic mass is discovered incidentally during preoperative abdominal CT performed in a 46 year old woman at the imaging work-up for a cervical carcinoma diagnosed by conization.

Clinical History and Imaging Procedures

A 46 year old white woman with a diagnosis of cervical cancer made by ionization was referred to our department to undergo an abdominal CT to look for eventual para-aortic lymphadenophaties as part of the staging work-up. She had a previous pelvic MR that staged the cancer as IB1 (not showed). Her previous clinical history was unremarkable and the patient was asymptomatic.
Abdominal CT was performed without contrast administration due to previous allergic episodes and showed an exuberant round and low-attenuation mass in the tail of the pancreas, measuring 10cm in diameter (Fig. 1). This lesion revealed inhomogeneity on its posterior aspect and a calcification was also seen in the mass, apparently within an internal septation.
A transabdominal US was performed to help characterize the lesion. It confirmed that the mass arose from the pancreatic tail, with multicystic appearance due to multiple thin internal septations, the major one with more than 2cm (Fig. 2).
MR was then performed and showed a well-circumscribed multiloculated cystic mass with low signal intensity on T1-WI (Fig. 3) and high signal intensity on T2-WI (Fig. 4) on unenhanced images, occupying the tail of the pancreas. After injection of gadolinium the mass showed enhancement of thin septa that separate the main cyst from the other cystic structures on T1-WI (Fig. 5).
The patient then underwent distal pancreatectomy (Fig. 6).

Discussion

Pancreatic cysts tumors are uncommon, accounting for less than 5% of all pancreatic tumours and 10% of the pancreatic cysts lesions.

Mucinous cystic neoplasms affect usually middle-aged women, between the 4th-6th decade of life. They arise from the epithelium of pancreatic ducts and according to the grade of dysplasia they may be classified as benign (mucinous cystadenoma), borderline tumour and malignant (mucinous cystadenocarcinoma). They predominantly involve the body and tail of the pancreas and have a multilocular macrocystic appearance, formed by 6 or fewer cysts with more than 2cm in diameter. These tumours can be asymptomatic in up to 75% of cases. When present, symptoms are caused by the mass effect of these often large lesions, with an average size of 10cm. At US, mucinous cystadenomas have a cystic appearance and show multilocular pattern with thin (< 3mm) internal septations. Mural nodules if present are suspicious for malignancy. CT after i.v. contrast administration better depicts the morphologic features described above with calcifications seen in 20% of the cases. Injection of contrast helps to exclude suspicious characteristics for malignancy as mural nodules or papillary projections, irregular thick wall and thick septations. Cystic hepatic metastases, peritoneal implants and local invasion can be also ruled-out. The complex internal architecture of these lesions, including septa and internal wall, is best appreciated at MRI. Large cystic spaces demonstrate high signal intensity T2-WI due to mucin content produced by these tumours, separated by thin curvilinear internal septa with low-signal-intensity; signal intensity on T1-WI depends on protein or hemorrhagic content. Gadolinium-enhanced T1-WI shows enhancement of septations. MRCP can be used to show the lack of communication with the pancreatic ductal system.

Serous cystadenomas have differences regarding their location (arising mainly in the head of pancreas), the size of the lesion (mean diameter of 5cm) and the number and size of cysts (?6 cysts ranging from few millimeters up to 2cm). Macrocystic unil- or multilocular appearance is seen up to 25% of the cases. A fibrous central scar with or without a stellate pattern of calcifications is seen in 30% of the cases and virtually pathognomonic of this entity.

Pancreatic pseudocyst represents 85% of pancreatic cystic lesions. It manifests as a unilocular cyst and correlates with a history of acute/chronic pancreatitis and elevated serum amylase levels. Peripancreatic fat stranding or calcifications associated with chronic pancreatitis are ancillary features in its diagnosis. They communicate with the pancreatic duct in up to 70% of cases.

Intraductal papillary mucinous tumours show communication with pancreatic duct system, best appreciated at MR colangiopancreatography, which can show dilatation of main pancreatic duct or side-branch ducts.

Ductal adenocarcinoma and other types of pancreatic adenocarcinoma can manifest as partially cystic lesions, often demonstrating adenopathies, metastasis and involvement of adjacent organs. Ovarian metastases to pancreas are the most likely to exhibit cystic appearance.

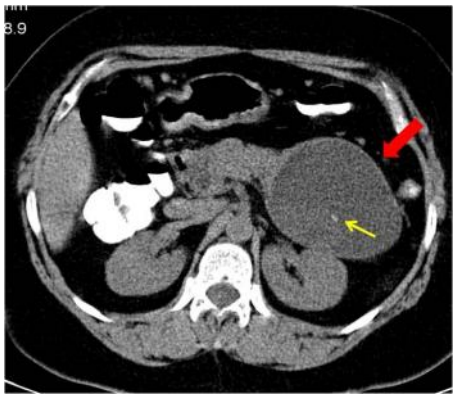
Mucinous cystic neoplasms of the pancreas should be surgical ressected due to its malignant potential. Prognosis is good after resection for benign and borderline tumours (>95% 5-year survival rate).

Final Diagnosis

Mucinous cystadenoma of the pancreas

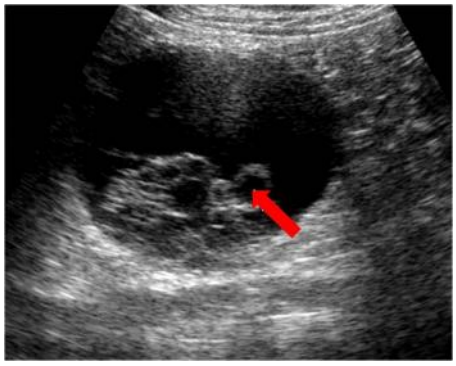
Figures

Figure 1



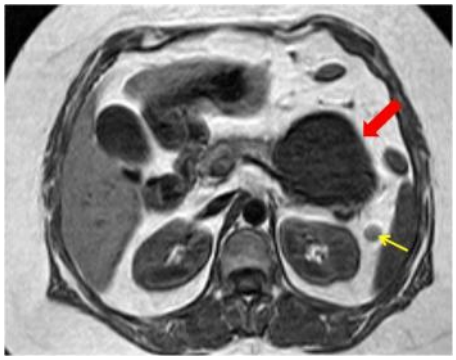
Abdominal CT shows a well-circumscribed lesion with 10 cm in diameter dependent of pancreatic tail (red arrow). Pancreatic tissue is seen evolving the lesion. A discrete focus of calcification is seen within the lesion (yellow arrow).

Figure 2



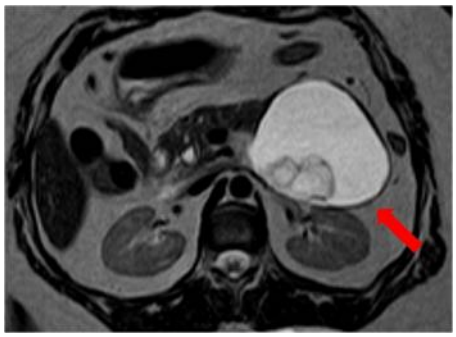
Transverse transabdominal US shows a mass in the continuity of the pancreatic tail. The multicystic nature of the lesion is evident with thin septations separating different cystic spaces (red arrow), the biggest one measuring more than 2cm.

Figure 3



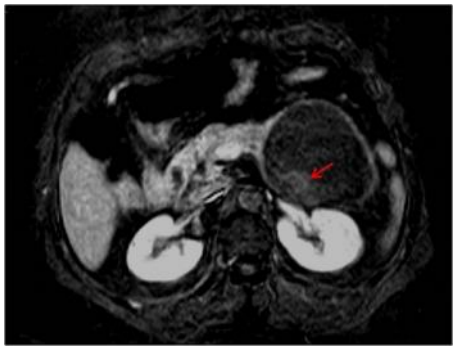
Axial T1-WI reveals a pancreatic tail dependent mass (red arrow) with low-signal intensity. An accessory spleen is incidentally observed (yellow arrow).

Figure 4



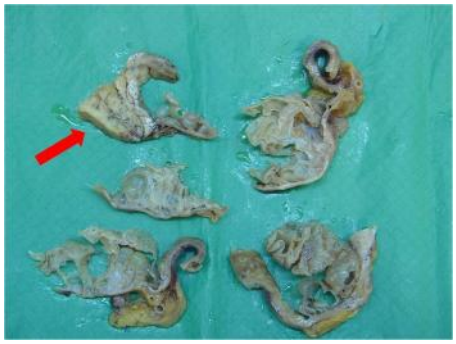
Axial T2-WI shows in the region of pancreatic tail a well-defined 10 cm lesion with low-signal intensity and thin septations defining high-signal intensity cystic compartments, the biggest lesion measuring more than 2cm (red arrow). No mural nodules or papillary projections are observed.

Figure 5



Axial contrast T1-WI-fat-supressed image shows enhancement of the smooth thin wall of the cystic lesion in the pancreatic tail, enhancement of the thin septa (red arrow) and highlights the low-signal-intensity of the cystic areas. No mural nodules or papillary projections are observed.

Figure 6



Gross specimen of the pancreatic tail lesion ruptured after manipulation. The pancreatic tissue representing the tail of the pancreas from where the lesion arises (red arrow) can be well depicted. Variably sized cystic spaces separated by thin septa are seen.

MeSH

Pancreas [A03.734]

A mixed exocrine and endocrine gland situated transversely across the posterior abdominal wall in the epigastric and hypochondriac regions. The endocrine portion is comprised of the ISLETS OF LANGERHANS, while the exocrine portion is a compound acinar gland that secretes digestive enzymes.

Pancreatic Cyst [C04.182.640]

A true cyst of the pancreas to be distinguished from the much more common PANCREATIC PSEUDOCYST by possessing a mucous epithelial lining. Pancreatic cysts are categorized as congenital, retention, neoplastic, parasitic, enterogenous, or dermoid. Congenital cysts occur more frequently as solitary cysts but may be multiple. Retention cysts are gross enlargements of pancreatic ducts secondary

to ductal obstruction. (From Bockus Gastroenterology, 4th ed, p4145)

Pancreatic Neoplasms [C06.689.667]
Tumors or cancer of the PANCREAS. Depending on the types of ISLET CELLS present in the tumors, various hormones can be secreted: GLUCAGON from PANCREATIC ALPHA CELLS; INSULIN from PANCREATIC BETA CELLS; and SOMATOSTATIN from the D CELLS. Most are malignant except the insulin-producing tumors (INSULINOMA).

References

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Citation

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