Case 10913

CT findings of a large mucinous cystadenocarcinoma of the pancreas
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Section: Abdominal imaging
Area of Interest: Pancreas
Procedure: Diagnostic procedure
Procedure: Contrast agent-intravenous
Imaging Technique: CT
Special Focus: Neoplasia Case Type: Clinical Cases
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Patient: 50 years, female

Clinical History:
A 50-year-old woman was admitted to the emergency department of our hospital for vomiting and abdominal pain.

Imaging Findings:
The patient underwent CT examination which showed a large, apparently capsulated mass with regular borders, in the left abdominal space, 19x18x24 cm in size, with inhomogeneous density for the presence of semifluid content areas alternating with solid content ones and microcalcifications. The mass presented a poor vascularisation mainly in the portal phase, it appeared not cleavable from the pancreatic tail and showed a displacement of the adjacent abdominal structures and vessels: no signs of infiltration were evident. The patient underwent surgical excision and the histological examination revealed a pancreatic mucinous cyst neoplasia with severe epithelial dysplasia areas and focal stromal infiltration. Immunohistochemistry showed an expression of cytokeratin 7 in epithelial cells and progesterone receptor in stromal cells. This histological and immunohistochemical profile was diagnostic of pancreatic mucinous cystadenocarcinoma arising on mucinous cystadenoma. Resection margin was free of tumour infiltration.

Discussion:
Pancreatic cystic lesions include pseudocysts and a variety of neoplasms that are usually divided in mucinous and non-mucinous lesions. The mucinous lesions are: benign mucinous cystadenomas, malignant mucinous cystic lesions, and intra-ductal papillary mucinous neoplasms (IPMNs). The non-mucinous lesions enclose serous cystadenomas and cystic endocrine tumours. Based on the degree of epithelial dysplasia, the World Health Organization classifies mucinous cystic neoplasms (MCNs) into three types: benign (adenomatous) in the 44%, 8% borderline, and malignant (carcinoma in situ in the 15% and invasive cancer in the 33%). [1, 2]
MCNs are slow growing tumours which predominate in middle age women. They are usually well-encapsulated, found in the body and tail of the pancreas in more than 90% of cases. [3] They may be unilocular or multilocular but typically they present a large central cyst with smaller peripheral cyst [4] and are made of columnar epithelium of mucin-producing cells surrounded by an ovarian stroma. The presence of ovarian stroma is a characteristic feature of MCN. Furthermore the lack of communication with the pancreatic ductal system allows the differential diagnosis with the IPMN. [5]
Most pancreatic cystic lesions produce no relevant signs or symptoms and are incidentally detected. Large lesions
may cause abdominal pain, nausea or vomiting, due to the compression of the neighbouring organs like the case reported. [1, 2]

US is the first tool to a diagnostic approach. It provides information on the cystic nature of the lesion and directs fine needle aspiration (FNA).

Contrast enhanced CT allows a better visualisation of suspicious signs for malignancy as wall thickening, thin septae or papillary projections. The presence of calcification of the cyst wall or of the content is a characteristic feature of MCN and helps to distinguish it from other cystic lesions. MRI provides a good visualisation of cysts content which can show high signal intensity on T1-weighted images for the presence of mucin or blood. [4]

FNA may improve the result of pancreatic imaging. MCN cysts contain mucin and epithelial cells; malignant cells are demonstrated in mucinous cystic adenocarcinoma.

Warshaw et al. and Hammel et al. first demonstrated the high concentration of tumour markers CEA and CA 72-4 in MCNs cyst fluid [6]. CEA is considered the most accurate marker and a value less than 5 ng/ml is indicative of serous cystadenomas while greater than 192ng/ml suggests mucinous lesions. [7]

Given the risk of malignancy MCNs should be resected. The prognosis for resected lesions without transmural invasion is about 100 percent survival. [2]

Differential Diagnosis List: Pancreatic mucinous cystadenocarcinoma, Serous cyst lesions, IPMN, Pseudocyst

Final Diagnosis: Pancreatic mucinous cystadenocarcinoma.

References:


Figure 1

Description: CT image shows a large, apparently capsulated mass, with inhomogeneous content with semifluid areas and solid ones. Origin: Radiology Unit, Department of Surgical and Medical Sciences and Translational Medicine, Faculty of Medicine and Psychology University of Rome, Sapienza, Italy. Sant’Andrea Hospital, Via di Grottarossa 1035, 00189, Rome, Italy.
Description: The mass presents poor contrast-enhancement. It appeared not cleavable from the pancreatic tail and displaces the abdominal structures and vessels without signs of local infiltration. 

Origin: Radiology Unit, Department of Surgical and Medical Sciences and Translational Medicine, Faculty of Medicine and Psychology University of Rome, Sapienza, Italy. Sant'Andrea Hospital, Via di Grottarossa 1035, 00189, Rome, Italy.
Description: The vessels, displaced laterally, are well-depicted on MIP (maximum intensity projection) reconstruction.

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