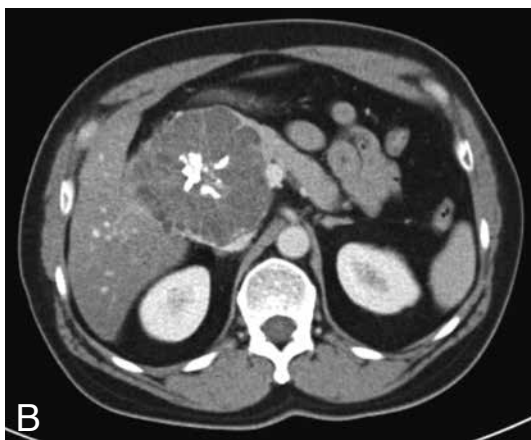
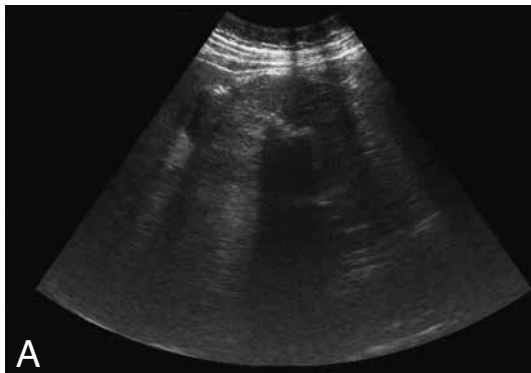


## IMAGES IN CLINICAL RADIOLOGY



### *Pancreas serous cystadenoma: typical imaging aspect of a rare tumor*

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Abdominal ultrasonography performed in a 54-year-old woman suffering from dyspepsia revealed a large pancreatic mass (Fig. A). CT showed an 8 cm rounded shape pancreatic head mass, slightly lobulated, hypodense but of non pure hydric density at its edge (15-20 UH) with a stellar-shaped calcified center (Fig. B). After iodine injection, multiple thin septa were visible forming multiple small lodges non-exceeding 2 cm diameter. Pancreatic head or body were not atrophic and main pancreatic duct size was < 3 mm.

#### *Comment*

This imaging aspect is pathognomonic of polycystic serous cystadenoma (SC). From 80 to 90% of SC are observed in women with an average age of 52 years. Less than half of the tumors are symptomatic and then diagnosis is incidental in more than half of the cases. The tumors can be located in head, body or tail of the pancreas, but cephalic location is the most frequent (> 50%). Contrarily to intraductal papillary mucinous neoplasms, SC does not communicate with the pancreatic ducts. Pancreatic SC may present 3 different morphological patterns. The most typical aspect is the polycystic pattern (70%). In that case the tumor is made by multiple cysts measuring less than 2 cm of diameter. The cysts are separated by fibrous septa, which can converge into a central scar that may calcify. Less than 20% of SC show the honeycomb pattern consisting in multiple subcentimeter cysts that cannot be individually distinguished by CT or MRI. Finally, oligocystic pattern is the more rare subtype (10%) with few large cysts with a diameter over 2 cm.

The so-called «solid» variant of serous cystadenoma is extremely rare and actually corresponds to the honeycomb pattern composed of microcysts. In ultrasonography SC is typically a hypo-echoic round-shape mass made by multiple hypo-echoic smaller cysts. Usually, if central scar is present it appears as hyper-echoic lesion. In addition the doppler study can detect the septa vascularization and of pancreatic main duct dilatation are not observed. Typical aspect in CT is superposable to the ultrasonographic aspect. Without contrast, the mass looks homogeneously hypoattenuating with density higher than water (10-40 HU) except the central calcifications if they exist. After iodine injection septa show high enhancement individualizing cysts and central fibrous scar. Tumor edges are slightly lobulated and better seen after iodine injection. Typical MRI aspect is an agglomeration of small cysts without communication with the main pancreatic duct. Cysts are hypo-intense in T1-weighted images and hyper-intense in T2-weighted images, while central scar shows relative hyper-intensity in T1 and hypo-intensity in T2 weighted images. The central scar is hypo-intense on every acquisition when calcified. After Gadolinium injection a late enhancement of the fibrous central scar and septa may be observed. SC is a slow growing tumor. Complications of tumors more than 10 cm (giant SC) may be rupture, obstructive chronic pancreatitis and compression/invasion of adjacent structures. Neoplastic dedifferentiation (cystadenocarcinoma) has been reported but is exceptional contrarily to mucinous cystadenoma. Asymptomatic patients are followed with cross-sectional imaging, while surgical resection is indicated only in symptomatic patients or in suspected cystadenocarcinoma. Therefore radiological studies are an essential step to recognize the typical aspect of the SC and guide the therapeutic algorithm. Radiologist implication is important in both diagnostic and pre-operative assessment especially to describe the tumor vascular relations when surgery is foreseen.

#### *Reference*

Jin-Young Choi et al. Typical and Atypical Manifestations of Serous Cystadenoma of the Pancreas: Imaging Findings with Pathologic Correlation. *AJR*, 2009, 193: 136-142.

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