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Mucinous cystadenoma of pancreas with honeycombing appearance: Radiological-Pathological correlation

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Abstract

Most mucinous cystadenomas of pancreas are solitary and multilocular with a few large compartments. Serous cystadenomas usually have a polycystic or microcystic (honeycomb) pattern consisting of collection of cysts (usually >6) that range from few millimetres up to 2 cm in size. Here we present a case of mucinous cystadenoma of pancreas showing an unusual appearance of honeycombing (which has not been described so far) using imaging studies such as endoscopic ultrasound and computed tomography with histopathological confirmation of the diagnosis.

Key words: Cystic; honeycombing; Mucinous; pancreatic; tumors

Introduction

Mucinous cystadenomas of the pancreas are low-grade tumors and they constitute about 10% of pancreatic cysts.[1] Their most common location is the body and tail, with the head being a less common site.[2] These tumors are more commonly seen in middle-aged females compared with males.[3,4] Serous cystadenomas are more common than mucinous cystadenomas with a ratio of 2:1.[5,6] The treatment of choice for mucinous cystadenomas is surgical removal because they may progress toward the development of invasive pancreatic cancer.[7] Hence, it is necessary to differentiate it from serous cystadenoma for which surgical resection is only necessary when symptomatic.[8]

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Case Report

A 57-year-old male came with complaints of diffuse abdominal pain for the past 3 months with an increase in severity over the past 10 days. Routine blood investigations (complete hemogram, blood sugar, and serum creatinine) were normal. Liver function tests were normal. Amylase and lipase levels were within normal limits.

Contrast-enhanced computed tomography (CT) [Figure 1A] showed a well-defined cystic lesion arising from the head and neck of the pancreas with enhancing septations within. The lesion was partly exophytic anteriorly and seen causing

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mass effect on the main pancreatic duct with downstream dilatation of the main pancreatic duct in the body and tail [Figure 1B]. The lesion was also seen exerting mass effect on the confluence of splenic and superior mesenteric vein and the adjacent portal vein. Endoscopic ultrasound (EUS) showed a heterogeneous lesion in the head of the pancreas which was predominantly isoechoic with few cysts in some portion of the lesion giving the appearance of "honeycomb" [Figure 2]. EUS-guided fine needle aspiration cytology (FNAC) was reported as well-differentiated adenocarcinoma of the pancreas.

The patient underwent pancreatectomy with cholecystectomy and splenectomy and the specimens were sent for histopathological examination. The patient recovered well after surgery and is under follow-up.

Grossly, the cut section of the pancreas showed a well-circumscribed lesion measuring ~4.0 × 4.0 × 3.5 cm, which appeared spongy because of the presence of multiple, tiny cysts ranging in size from 2 to 10 mm [Figure 3A]. Intervening areas were gray-white in color.

On microscopy, the specimen showed an unencapsulated neoplasm in the pancreas composed of cysts of varying sizes lined by single layer of cuboidal to low columnar mucinous epithelium with occasional papillary processes [Figure 3B]. Mild nuclear atypia was evident. Stroma showed fibrosis and collagenization. Histopathological diagnosis of mucinous cystadenoma of pancreas was made based on the above findings.

Discussion

Cystic tumors of the pancreas comprise around 10%–15% of cystic lesions of the pancreas. Benign cystadenomas (serous and mucinous) and mucinous cystadenocarcinomas comprise >75% and intraductal papillary mucinous neoplasms (IPMNs) constitute ~21%–30% of all cystic tumors of the pancreas[3]. Mucinous cystadenomas should be resected because of its high probability to proceeding to mucinous cystic adenocarcinoma.[9]

Serous cystadenomas are benign cystic tumors made up of cuboidal epithelium that secretes serous fluid. Typically, imaging features of serous cystadenomas have three morphologic patterns: polycystic (70%), honeycomb (10%), and oligocystic (<10%).[10] The polycystic pattern is characterized by multiple small cysts (<2 cm). The honeycomb pattern, seen in approximately 20% of patients, is characterized by numerous small cysts. The oliogocystic pattern has a few large cysts (>2 cm). Predominantly serous cystadenomas have a microcystic appearance with multiple small cysts (<2 cm). Sometimes they may show central calcifications and usually show enhancement around the cysts on contrast study. The fibrous septae separating the cystic spaces may coalesce to form the central scar.[11]

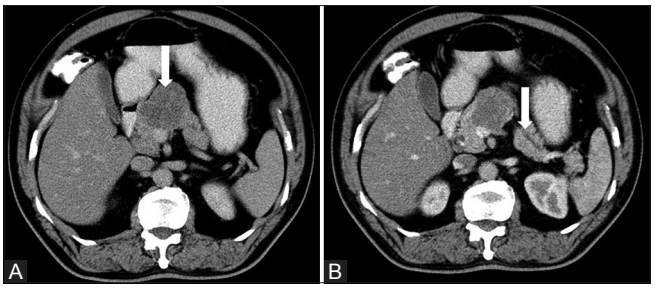

Figure 1 (A and B): (A) CECT abdomen shows a well-defined cystic lesion in the head and neck of the pancreas (arrow) with enhancing septations within. (B) CECT abdomen demonstrating the mass effect of the cystic lesion causing downstream dilatation of main pancreatic duct (arrow)

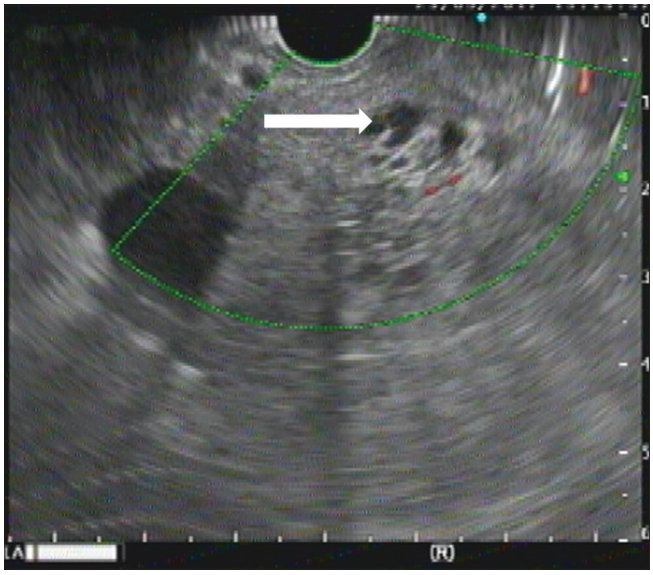

Figure 2: Endoscopic ultrasound demonstrates a predominantly isoechoic lesion with few cystic portions noted giving "honeycomb" appearance (arrow)

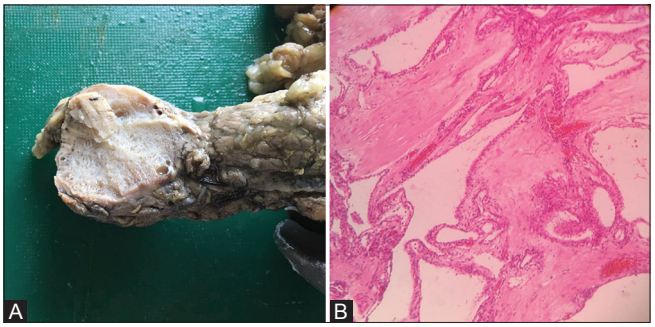

Figure 3 (A and B): (A) Gross specimen shows a well-circumscribed pancreatic lesion which appears spongy and trabeculated with no secondary changes. (B) Microscopic examination shows an unencapsulated neoplasm in the pancreas composed of cysts of varying sizes lined by single layer of flattened to cuboidal epithelium with occasional papillary processes

Mucinous cystadenomas are benign cystic tumors made up of columnar cells producing mucin. They are low-grade

mucinous cystic neoplasms. Mucinous cystadenomas are usually macrocystic (>5 cm) with a smooth contour with or without septations.[12] Calcifications if present tend to be more peripheral in nature.[13, 14] They can exert mass effect over the pancreatic duct and cause duct obstruction.[14] Only on very rare occasions, mucinous cystadenoma may communicate with the pancreatic duct.[15] The management of mucinous cystic neoplasm is surgery unless contraindicated because of its progression to malignancy.[2]

IPMNs are intraductal papillary tumors of mucin-producing cells in the main pancreatic duct or its side branches. The most common location of IPMN is the head (50%), the tail of pancreas (7%), and uncinate process (4%) with the remaining lesions spread throughout the pancreas.[3] Three types have been described according to the Fukuoka consensus guidelines (2012)—main duct IPMN, branch duct IPMN, and mixed IPMN.[3] On imaging, branch duct IPMN may be microcystic or macrocystic. Microcystic IPMN has imaging appearances similar to serous cystadenoma except with the communication with the duct being the difference among them. In main duct IPMN, either part of the duct or the entire duct is dilated and filled with mucin (low density) with the presence of enhancing mural nodule indicating the progression to malignancy.

In this patient, the EUS revealed a predominantly isoechoic lesion with small cysts in some portion (honeycombing appearance) that is a classical feature for serous cystadenomas. However, this lesion was proven to be a mucinous cystadenoma on postoperative histopathological examination. Hence, it is essential for the radiologist and gastroenterologists to be aware of this unusual imaging appearance of mucinous cystadenoma which has not been described previously.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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