

# Serous microcystic adenoma of the pancreas: Case report and review of the literature

Pankreasın seröz mikrokistik adenomu: Olgu sunumu ve literatürün gözden geçirilmesi

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*Cystic tumors of the pancreas are rare neoplasms. They are more frequently identified given the improvements in imaging techniques. Serous cystadenomas are the most common among cystic neoplasms of the pancreas. In this case report we present a patient who was incidentally found to have a cystic mass in the pancreas during an abdominal imaging done for unrelated reasons and was diagnosed as serous cystadenoma of the pancreas. She was asymptomatic on admission and was operated six years later because of the progressive growth of the tumor during that period. Distal pancreatectomy was performed. Histopathologic examination of the surgery specimen confirmed the diagnosis of serous microcystic adenoma. Despite their rarity, serous cystadenomas should be kept in mind in the differential diagnosis of the cystic lesions of the pancreas. Furthermore, the differentiation of serous cystadenoma from other cystic tumors as well as from non-neoplastic cysts is very important because of the great difference in their management.*

Key words: Pancreas, cyst, neoplasm, cystadenoma

## INTRODUCTION

Cystic neoplasms of the pancreas account for approximately 10% to 15% of all cystic lesions of the pancreas (1). Their prevalence is increasing given the improvements in imaging techniques. These neoplasms are divided into four groups: Serous cystadenomas (SCA), mucinous cystic neoplasms, intraductal papillary mucinous tumor, and unusual cystic neoplasms (2). Subgroups have different treatments and prognoses; therefore, a differential diagnosis is very important.

Serous cystadenomas account for 25% of all cystic tumors of the pancreas (3). The World Health Organization has subclassified them into two groups

*Pankreasın kistik tümörleri nadir görülen neoplazmlardır. Görüntüleme yöntemlerindeki ilerlemeler ile daha sıklıkla teşhis edilmektedirler. Seröz kistadenomlar pankreasın kistik neoplazmları arasında en sık görülenlerdir. Bu vaka takdiminde başka nedenlerle yapılan abdominal ultrasonografide rastlantısal olarak pankreasta kistik bir kitle saptanıp pankreasın seröz kistadenomu tanısı konan bir hasta sunulmuştur. Başyuru esnasında asemptomatik olan hasta 6 yıllık izleminde kitle boyutlarında ilerleyici büyüme olması üzerine öpere edildi. Distal pankreatektomi uygulanan hastada cerrahi spesimenin histopatolojik incelemesi seröz mikrokistik adenom tanısını teyit etti. Nadir görülmelerine rağmen seröz kistadenomların pankreasta görülen kistik lezyonların ayırıcı tanısında akıld tutulmaları gerekir. Özellikle tedavilerindeki önemli farklılıklardan dolayı seröz kistadenomların diğer kistik tümörlerden ve neoplastik olmayan tümörlerden ayırımı çok önemlidir.*

Anahtar kelimeler: Pankreas, kist, neoplasm, kistadenom

as serous microcystic adenomas and serous oligocystic adenomas (4). Serous microcystic adenomas usually have innumerable tiny cysts. Oligocystic adenomas have a countable number of cysts, which are usually greater than 2 cm in diameter.

Herein we present a patient who was incidentally found to have a cystic mass in the pancreas during an abdominal imaging done for unrelated reasons and who was diagnosed as serous microcystic adenoma of the pancreas, together with a review of the literature.

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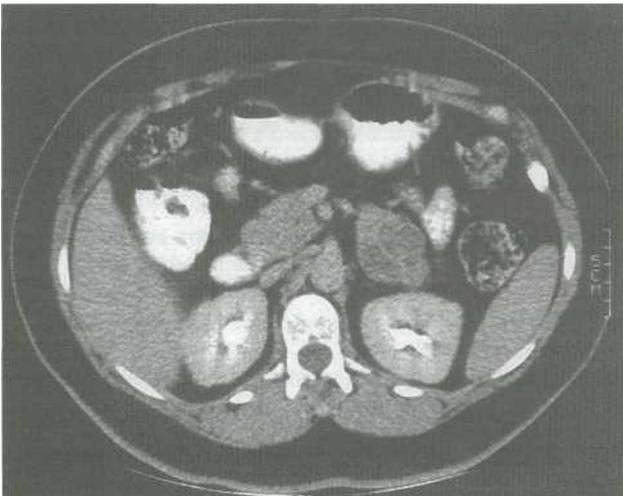
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## CASE REPORT

A 44-year-old woman was admitted to an Endocrinology Department in 1996 with the main complaint of hirsutism. An abdominal ultrasound (US) examination was performed and a cystic mass involving the body and tail of the pancreas was observed incidentally. She was referred to our clinic for further investigation and treatment.

The patient was asymptomatic on admission to our clinic. There was no history of abdominal trauma, gallstones, pancreatitis or alcohol consumption. Physical examination was remarkable only for hirsutism. Complete blood count, biochemical parameters, and CA 19-9 were all within normal limits as well. A dynamic contrast-enhanced computed tomography (CT) scan was performed which showed a 3x2.8 cm mass with lobulated contours containing multiple tiny cysts separated by thin septa localized in the tail of the pancreas (Figure 1).



**Figure 1.** Contrast enhanced dynamic CT scan of the patient demonstrates a 3x2.8 cm mass localized in the tail of the pancreas with lobulated contours and containing multiple tiny cysts separated by thin septa

Splenic artery, superior mesenteric artery, and superior mesenteric vein were all normal with no signs of compression or invasion. Pancreatic channel was also normal. Endoscopic ultrasonography (EUS) examination revealed a 3x3 cm mass with cystic components located in the tail of the pancreas. A diagnosis of SCA was suggested and the patient was regularly followed-up. No surgical inter-

vention was considered at that time because the patient was completely asymptomatic and the mass was quite small without any sign of compression. Follow-up was done every 3-6 months with abdominal US or CT scan. In May 2002, dynamic contrast-enhanced CT revealed that the size of the mass had increased to 5x4.5 cm, and it had solid components. The patient was operated in May 2002 because of the progressive growth of the tumor. Distal pancreatectomy preserving the spleen was performed. The cut surface of the gross specimen showed a well circumscribed, 8x5x4 cm mass with multiple tiny cysts, giving the tumor a honeycomb appearance. Microscopic examination with hematoxylin and eosin staining revealed multiple small cysts lined by a single layer of flat or cuboidal epithelium. These findings confirmed the diagnosis of serous microcystic adenoma of the pancreas. The patient is well at the moment with no post-operative complications.

## DISCUSSION

Serous cystadenomas are benign cystic tumors of the pancreas. Although rare cases of serous cyst adenocarcinomas have been reported, the interpretation of these cases as malignant is controversial (5). They occur more commonly in women. The majority of the patients manifest non-specific symptoms such as abdominal pain, weight loss, nausea, vomiting, fever, and melena. Up to one-third of the patients are asymptomatic and they are diagnosed incidentally during abdominal imaging done for unrelated reasons (5). Our patient was asymptomatic and pancreatic SCA was first identified in an abdominal US performed for hirsutism.

Diagnosis of SCA relies mainly on imaging techniques such as US, CT, and EUS. While they may occur in any portion of the pancreas, location in the head and tail is more common than in the body. Serous microcystic adenomas are composed of multiple small cysts separated by thin septa and often manifest a honeycomb appearance on imaging. On US, they usually have more than six loculi that are less than 2 cm in diameter (6). On plain CT, a sunburst pattern of calcification with a central scar is pathognomonic, but occurs in up to 30% of patients (7). On contrast-enhanced CT, enhancement occurs especially in the areas of septation (8). EUS may also reveal the honeycomb appearance of SCA. Despite these multiple modality approaches, except in centers having great experi-

ence in pancreatic imaging, an accurate preoperative diagnosis of SCA can be made only in about 40% of the patients (9).

Serous cystadenomas can occur alone or may be associated with other pancreatic or extrapancreatic neoplasms (10-12). The differential diagnosis of SCA from pseudocysts and other cystic neoplasms is very important because, in contrast to other cystic neoplasms, SCAs may not require surgery. Serous microcystic adenomas can be misdiagnosed as solid lesions if small loculi with septa cannot be visualized (13). Serous oligocystic adenomas can be misdiagnosed as either mucinous cystic tumors or pseudocysts because of the oligocystic or unilocular nature of all (14). But most of the patients with pseudocysts have a history of pancreatitis and they are often older individuals. Hypervascularity is another feature distinguishing SCA from pseudocysts (15). Endoscopic retrograde pancreatography shows a communication of the pseudocyst with pancreatic duct in 70% of the cases, in contrast to SCAs, which lack communication (16,17). On CT scans, mucinous cystic tumors have a few, large loculi with thin septa. In contrast to SCA, which have intratumoral calcifications, mucinous tumors and pseudocysts may have peripheral calcifications (6). Differentiation of SCAs from mucinous cystadenomas and pseudocysts is usually made by US or CT findings. But when the distinction is less clear, fine-needle aspiration of cystic lesions for cytological and biochemical analysis of the fluid can be performed and may help in establishing the diagnosis. On cytological analysis periodic acid-Schiff stains show abundant cytoplasmic glycogen, and stains for mucins are negative (18). Cells are cuboidal to polygonal in shape and no mitoses are seen. Cytological analysis is diagnostic in about 50% to 60% of cases. Biochemical analysis of cyst fluid may include amylase and some tumor markers such as carcinoembryonic antigen, NB/70K, CA 72-4, CA 125, CA 15-3 tissue polypeptide antigen, and pS2 protein (19-21). Amylase content of the fluid in SCAs is usually lower than the levels in pseudocysts and mucinous cystic tumors. SCAs have

lower levels of tumor markers compared to mucinous cystic tumors.

In our case, preoperative diagnosis was suggested mainly on the basis of imaging techniques. The patient did not have a history of pancreatitis to suggest a pseudocyst. CT scan revealed a mass composed of multiple tiny cysts separated by thin septa suggesting the diagnosis of serous cystadenoma.

Symptoms of the patient, the accuracy of the preoperative diagnosis, safety of the resection, and risks of conservative management play a role in the decision of the treatment of SCA (9). Most of the symptomatic patients undergo pancreatic resection. Drainage of these tumors is inappropriate. Tumors in the body or tail of the pancreas require distal pancreatectomy. Whipple's resection remains the surgical procedure of choice for patients with tumors in the head or uncinate process of the pancreas (9). Patients with cystic lesions of undetermined nature undergo resection because there is risk of mistaking a mucinous tumor for SCA. Tumors in the body and tail of the pancreas have a more favorable outcome compared to those in the head or uncinate process.

Serous cystadenomas almost invariably have a benign course. Therefore some authors suggest that SCA may be conservatively managed and closely followed-up in asymptomatic patients without duct or vascular obstruction, in elderly patients or in those who have poor operative risks (22,23). But conservative management has the risk of progressive growth of the tumor and development of complications such as hemorrhage, erosion into adjacent structures and gastrointestinal or biliary obstruction (24). In our case, although the patient was asymptomatic, she was operated because of the progressive growth of the tumor.

In conclusion, SCAs of the pancreas are more frequently identified with the advances in imaging techniques. The differentiation from other cystic tumors as well as from non-neoplastic cysts is very important because of the great difference in their management.

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