Case Report

An Unusual Case of Microcystic Serous Cystadenoma in a 19-Year-Old Male Patient

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Abstract

Introduction
Microcystic serous cystadenomas are uncommon, benign neoplasms rarely known to progress to malignancy. They are typically asymptomatic and inadvertently discovered during imaging for another unrelated condition. When discovered, they are commonly found in females over 60 years of age.

Case Presentation
In this case report, we examine a unique presentation of a serous cystadenoma discovered when a 19-year-old male presented with symptoms of abdominal pain, nausea, and vomiting.

Conclusion
Previous studies on serous cystadenomas in a younger male demographic are rare. Therefore, this study will provide additional insight into the signs, symptoms, diagnosis, and management of cystadenomas in young patients.

Keywords
serous cystadenoma; neoplasms; magnetic resonance cholangiopancreatography; diagnosis; pancreatectomy; operative surgical procedures

Introduction
The cause of serous cystadenoma (SC) development is poorly understood. There is a possibility that SC is caused by a genetic mutation that results in the formation of the cystadenoma.[1] The autosomal dominant disease von Hippel-Lindau (VHL) occurs when the VHL gene on chromosome 3p is deleted. Of patients with this deletion, 77% develop pancreatic lesions, which include SCs.[2] Typically, SCs are benign and almost always found in older women. There is a 3:1 female preponderance as well as a known association with diabetes mellitus.[3]

There are different types of SCs, with varying morphologic and immune-histochemical features. SCs are classified into serous microcystic adenomas and serous macrocystic adenomas. Microcystic serous cystadenomas are the most encountered cystadenoma, accounting for 1-2% of all exocrine pancreatic tumors.[1]

Most SCs are asymptomatic until substantial enlargement compromises the surrounding space of structures. Signs and symptoms typically begin when the cyst is larger than 4 cm. These symptoms include palpation of a mass during physical examination, abdominal discomfort, bile duct obstruction, or gastric outlet obstruction.[2,4]

The development and increased use of computerized tomography (CT) scans and magnetic resonance imaging (MRI) in the last 15 years has contributed to increased SC detection. The advancement of imaging techniques has led to identifying different morphological patterns. Specifically, the microcystic pattern includes

numerous cysts that measure less than 2 cm, separated by thin fibrous septa, and described to have a honeycomb-like appearance around a central stellate scar.[1]

Diagnosis is typically made with cross-sectional imaging with an MRI or a magnetic resonance cholangiopancreatography (MRCP). If the results are unclear, an endoscopic ultrasound-guided fine-needle aspiration (EUS-FNA) is indicated for diagnosis and risk stratification. An EUS is the ideal imaging technique, and an FNA can obtain fluid for cytology. Levels of carcinoembryonic antigen in the cyst fluid can help differentiate a cystadenoma from a malignant cystadenocarcinoma since lower levels of carcinoembryonic antigen would be discovered in the cystadenoma.[4] Endoscopic retrograde cholangiopancreatography was traditionally used to evaluate pancreatic lesions, but it has been replaced with other imaging studies, such as MRCP, EUS, and CT pancreatic protocol.[5] When evaluating a cyst, the gold standard imaging modality is MRI/MRCP. A dedicated pancreatic protocol CT scan can be used as an alternative for patients unable to undergo an MRI/MRCP. The multidetector CT is usually conducted as a biphasic contrast study and provides better visualization of pancreatic parenchymal calcifications than ultrasound and MRI.[5]

Case Presentation

A 19-year-old African male with no medical history presented to the emergency department in the evening for abdominal pain. The pain had started early that morning, and he initially went to a local hospital after symptoms started but was discharged and instructed to take ibuprofen. Despite taking ibuprofen, the patient's pain worsened throughout the day, eventually causing nausea and vomiting. Upon repeat arrival to the hospital later that day, the patient's labs were only significant for an elevated white blood cell count of 14.0 with a neutrophilic predominance of 87.4%. A physical exam showed a young male in acute distress with left upper quadrant pain. Imaging revealed a normal chest x-ray. However, a CT of the abdomen and pelvis revealed a large 6.5 x 7.9 x 8.2 cm multi-septated cystic mass arising from the tail of the pancreas with mildly enlarged bilateral inguinal lymph nodes. The radiology team concluded that the mass was most consistent with a microcystic SC but recommended an MRCP for further evaluation. The patient was given a gastrointestinal cocktail consisting of famotidine, ondansetron, ketorolac, and normal saline, and he was admitted to the wards.

The patient was scheduled for an MCRP, and the general surgery and gastroenterology teams were consulted. In the interim, he was given morphine for pain relief. General surgery determined that the patient would benefit from a transfer to a hospital with hepatobiliary surgery services. The gastroenterology service agreed to order the MRCP and then transfer the patient to another hospital for EUS evaluation by a pancreatic surgeon. The MRCP revealed a large 6.5 x 7.9 x 8.2 cm complex mass arising from the tail of the pancreas with rim and septal enhancement, which included a differential of benign and neoplastic etiologies.

The patient was notified of the findings and agreed and consented to the plan. The patient underwent a distal pancreatectomy, and a diagnosis of microcystic SC was confirmed. The patient's condition during the postoperative period was not disclosed, and the patient was subsequently lost to follow-up.

Discussion

Pancreatic cysts are commonly found incidentally in women older than 60. Cases of microcystic SC in young males are rare. In this case, the patient developed acute symptoms of nausea, vomiting, and abdominal pain due to the size of the pancreatic cyst. Literature informs us that symptoms typically develop when the cyst is greater than 4 cm in size, thus compromising neighboring structures.[2] In this case, the patient's cyst was discovered to be greater than 4 cm (6.5 x 7.9 x 8.2 cm) on the abdominal CT scan.

Additionally, the patient's cyst was multiseptated, corresponding with literature findings stating that SCs typically demonstrate thin fibrous septa on CT.[2] The next step in diagnosis is typically made with an MRI/MRCP. If results are unclear, then an EUS-FNA is indicated.[4] This patient underwent an MRCP, which showed rim and septal enhancement. Also, EUS was pursued to characterize the lesion's size. Since

the patient was acutely symptomatic, surgery was indicated. The patient underwent distal pancreatectomy without splenectomy, and his symptoms improved.

With regard to general treatment options, non-surgical management is recommended for asymptomatic cases of SC because of the small risk of malignancy.[6] The prognosis for patients with SCs is favorable. However, there have been cases in which microcystic SCs can enlarge and progress to macrocystic SCs.[1] It has been determined in various studies that the median increase in size is 0.6 cm/y.[4] Lesions greater than 4 cm tend to grow faster, with a growth of about 2 cm/y, while lesions less than 4 cm tend to grow slower at a rate of 0.12 cm/y.[4] Therefore, serial imaging should be administered for follow-up surveillance.

Surgery is recommended for symptomatic, rapidly growing, or marginally resectable SC at presentation.[6] The procedure type depends on the location, which may involve a distal pancreatectomy with or without splenectomy, mid-pancreatectomy, or pancreaticoduodenectomy, also known as a Whipple procedure.[1] Common postoperative complications of these procedures include the development of pancreatic fistulas and an increased rate of developing long-term diabetes mellitus, as well as pancreatic exocrine inefficiency. Excising an SC is usually curative, and, in general, postoperative surveillance is not required unless invasive carcinoma is identified pathologically.[3,6]

Conclusion

Microcystic SCs are rare and benign neoplasms that seldom progress to malignancy. These pancreatic cysts are commonly discovered in asymptomatic females greater than the age of 60 years. Symptoms typically present when the size of the cyst grows greater than 4 cm in size. While CT can detect the presence of these benign neoplasms, MRI is the gold standard imaging modality. Due to pancreatic cystadenomas' ability to grow with time, serial imaging should be administered for follow-up surveillance. In asymptomatic patients, non-surgical management is recommended. Surgery is considered if the patient is symptomatic or the SC is rapidly growing or is marginally resectable at presentation. Excising an SC is usually curative. This unique case of a microcystic SC in a 19-year-old male broadens the epidemiological perspective that surrounds this particular pathology.

Conflicts of Interest

The authors declare they have no conflicts of interest.

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