Adenosquamous Carcinoma of the Pancreas: Differentiation from Pancreatic Pseudocyst

Seung Jae Myung, M.D., Yeun Suk Kim, M.D., Seung Yong Kim, M.D., Hong Ja Kim, M.D., Jeong Su Kim, M.D., Dong Wan Seo, M.D., Sung Koo Lee, M.D., Myung Hwan Kim, M.D., and Young Il Min, M.D.

Department of Internal Medicine, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea

INTRODUCTION

Adenosquamous carcinoma of the pancreas is a rare form of pancreatic cancer. Its biological behavior and clinical features are known to be similar to the much more common ductal adenocarcinoma or to pure squamous cell carcinoma, another rare form of pancreatic malignancy. However, the unusual manifestations of cancer with cystic degeneration and extravasation of contrast to the mass have also been reported. We report here an unusual case of adenosquamous carcinoma of the pancreas which has initially brought some difficulties in differentiating from pancreatic pseudocyst.

CASE REPORT

A 64-year-old man was admitted to our hospital with a two-week history of epigastric pain. The patient complained that the pain was dull and continuous radiating to his back. He was a social...
drinker and denied use of any kind of drug medication. There was no history of abdominal trauma or diabetes mellitus. No fever, chills, jaundice, or weight loss was reported. Family history was unremarkable.

On physical examination, the patient was thin and not in the state of acute distress. He complained of mild tenderness over the epigastrium, but no rebound tenderness or guarding was present. There was no hepatosplenomegaly or palpable mass. Laboratory tests included white blood count 8,100 cells/mm³, hemoglobin 13.6 g/dl, amylase 263 U/L (60-210 U/L), and lipase 461 U/L (66-220 U/L). Liver function test and tumor markers (CA19-9 and CEA) were within the normal limit.

An abdominal CT scan revealed a 3- to 4-cm sized ovoid and cyst-like lesion in the region of the pancreatic head (Fig. 1). The pancreatic duct was mildly dilated, however, the parenchyma of the pancreatic body and tail showed no specific abnormal findings. Endoscopic retrograde balloon pancreatography (ERP) showed about a 2 cm segmental narrowing of the main duct at the head portion of the pancreas and mild upstream dilatation (Fig. 2A). In the pancreatic head, round contrast pooling in communication with the main duct was noted (Fig. 2A). Brush cytology revealed no malignant cells but many sheets of ductal

---

**Fig. 1.** Abdominal CT scan showing 3- to 4-cm sized ovoid cyst-like lesion in the region of the pancreatic head.

**Fig 2.** A. Endoscopic retrograde balloon pancreatogram (ERP) showing segmental narrowing (arrow) and mild upstream dilatation of the main pancreatic duct and round pooling of the contrast at some distance (arrow head).

B. Magnetic resonance cholangiopancreatography revealing pancreatic ductal change similar to the findings on ERP and round cystic lesion in the pancreatic head.
epithelial cells. Magnetic resonance cholangiopancreatography showed pancreatic ductal change similar to the findings on ERP and a round lesion with cystic character in the pancreatic head (Fig. 2B).

The clinical features and radiological findings were felt most consistent with a pancreatic pseudocyst and benign stricture secondary to chronic pancreatitis, although a cystic tumor or ductal carcinoma could not be ruled out. A pancreatic stent was inserted to relieve the stasis in the pancreatic duct, and supportive care including NPO and total parenteral nutrition was commenced. Even after four weeks of medical therapy, the patient still complained about the persistence of abdominal pain. Follow-up ERP showed no change of the ductal narrowing in the main pancreatic duct but the cyst-like lesion in the region of the pancreatic head showed enlargement on follow-up CT scan. Cytologic findings from needle biopsy of the pancreatic head were interpreted as adenosquamous carcinoma. The patient underwent pylorus preserving pancreaticoduodenectomy and a 3.5 × 3 × 2.8 cm sized poorly demarcated mass with a cystic cavity was resected (Fig. 3). Upon histological examination, the tumor was composed mainly of nests of malignant squamous cells with areas of adenocarcinoma which was compatible with adenosquamous carcinoma of the pancreas (Fig. 4). The postoperative course was un-

Fig 3. Macroscopic appearance of the adenosquamous carcinoma of the pancreatic head. Poorly demarcated firm infiltrating mass with cystic change was noted.

Fig 4. Photomicrograph of the transitional zone where adenocarcinoma and squamous cell carcinoma are seen in contact.
eventful and the patient was doing well at 4-month follow up.

DISCUSSION

Adenosquamous carcinoma of the pancreas, often called adenoacanthoma, is a rare variant of nonendocrine pancreatic cancer.\textsuperscript{1,2} The collective incidence of this malignancy has been estimated at 1–4% of pancreatic malignancies,\textsuperscript{3–4} even though higher rates of 9–11% have been reported in Japan.\textsuperscript{1,9} Some authors have suggested that pure squamous cell carcinoma behaves more aggressively,\textsuperscript{8} however, literature review shows no significant differences in age prevalence, sex ratio, distribution of cancer in the pancreas, neoplastic behavior, or prognosis among adenosquamous carcinoma, ductal cell carcinoma, and pure squamous cell carcinoma of the pancreas.\textsuperscript{2–5}

Our patient was initially managed under the diagnosis of chronic pancreatitis with pseudocyst because of his pain compatible with pancreatitis and the elevated pancreatic enzymes. Radiologic findings supported our first conclusion. Segmental narrowing of the main pancreatic duct suggesting benign stricture was detected on ERP. The lesion in the pancreatic head was almost purely cystic and it did not exhibit a definite mass on CT (Fig. 1). Brush cytology revealed no malignant cells, although a sufficient number of cells had been taken. However, there also were several findings that were not consistent with chronic pancreatitis. The parenchyma of the pancreatic body and tail did not show the changes of chronic inflammation, such as swelling, fluid collection, or calcification on CT scan. The dilated main duct was rather smooth on ERP as well. A cystic tumor and malignant neoplasm were also suspected, but clinical features and radiological findings were not compatible with both conditions.

The patient was managed by stenting of the pancreatic duct. Pain relief and the resolution of the pseudocyst were expected.\textsuperscript{10,11} Even after four weeks of medical treatment, the patient’s symptoms had not been improved. Follow up ERP showed no change of ductal stricture, and abdominal CT scan showed enlargement of the previously noted cyst-like lesion. The cytologic findings from the needle biopsy suggested adenosquamous carcinoma of the pancreas, which was confirmed by surgical resection of the tumor.

Aside from having a rare type of pancreatic tumor, this patient exhibited very unusual features which led us to an erroneous initial diagnosis. This case showed extravasation of ERP contrast into a tumor cavity due to cystic change, as well as ductal communication to the cystic portion of the tumor. These findings can occur in a cystic neoplasm with ductal communication or in a pseudocyst associated with pancreatitis or tumor. Extravasation of the contrast to the ductal cell carcinoma is possible,\textsuperscript{12} however, pooling of the contrast at some distance from the main duct or round accumulation of the contrast shown in our case is an uncommon finding. These findings are quite unusual for adenosquamous carcinoma of the pancreas as well, although a few similar cases had been reported.\textsuperscript{5,6} Our case and previous cases suggest that this rare pancreatic malignancy can be misdiagnosed as pancreatitis with pseudocyst. In adenosquamous carcinoma of the pancreas, ductal communication with cancer may be expected since this rare malignancy may arise from the malignant degeneration of squamous metaplasia of pancreatic ductal epithelium.\textsuperscript{1}

In summary, we report a case of adenosquamous carcinoma of the pancreas with unusual manifestation. Initially, a cyst-like lesion in the region of pancreatic head was diagnosed as pancreatic pseudocyst associated with chronic pancreatitis. Our case emphasizes that this rare pancreatic tumor can be difficult to differentiate from a benign condition, such as pan-
creatic pseudocyst, thus mislead the physician into arriving at an initial misdiagnosis.

Key Word: Pseudocyst, Pancreas, Adenosquamous carcinoma

REFERENCES