

A case of pancreatic cancer diagnosed by serial pancreatic juice aspiration cytological examination

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Background: Pancreatic cancer has a poor prognosis, so early diagnosis is crucial. Endoscopic ultrasonography-fine needle aspiration (EUS-FNA) is the gold standard method for evaluating and diagnosing pancreatic cancer due to its high diagnostic accuracy. However, performing EUS-FNA can be quite challenging for early pancreas cancer that has no detectable mass. Also, when intervening vessels lie between the ultrasound endoscope and the target lesion, the risk of bleeding significantly increases. Serial pancreatic juice aspiration cytological examination (SPACE) can be used to diagnose early pancreatic cancer that is difficult to be diagnosed by EUS-FNA. During SPACE, pancreatic juice secreted from the pancreas is directly aspirated via endoscopic nasopancreatic drainage (ENPD) and sent for cytological analysis to detect cancer cells. In this review, we report a case of early pancreatic cancer successfully diagnosed by SPACE.

Case: A 74-year-old female patient visited the outpatient clinic due to pancreatic duct dilation and atrophy found on abdominal ultrasonography and computed tomography. Pancreas magnetic resonance imaging (MRI) found an abrupt luminal narrowing of the main pancreatic duct in the head portion, without a remarkable focal mass-forming lesion. Blood test results showed an elevated CA 19-9 level of 135.9 U/ml. In response to these findings, we suspected pancreatic cancer and decided to proceed with EUS-FNA. Although an 18.5mm-sized hypoechoic mass was found at the pancreatic neck during EUS, EUS-FNA could not be implemented due to intervening vessels. Therefore, we decided to perform endoscopic retrograde cholangiopancreatography (ERCP) with SPACE. A 5 Fr ENPD catheter was deployed into the pancreatic duct and pancreatic juice was collected six times daily for three days. Cytological examination of the aspirated pancreatic juice confirmed the diagnosis of pancreas adenocarcinoma. After a multidisciplinary evaluation, the patient underwent pylorus-preserving pancreaticoduodenectomy (PPPD) and adjuvant FOLFIRINOX chemotherapy.

Conclusion: SPACE is an effective diagnostic method for early pancreatic cancer, where the use of EUS-FNA is challenging.

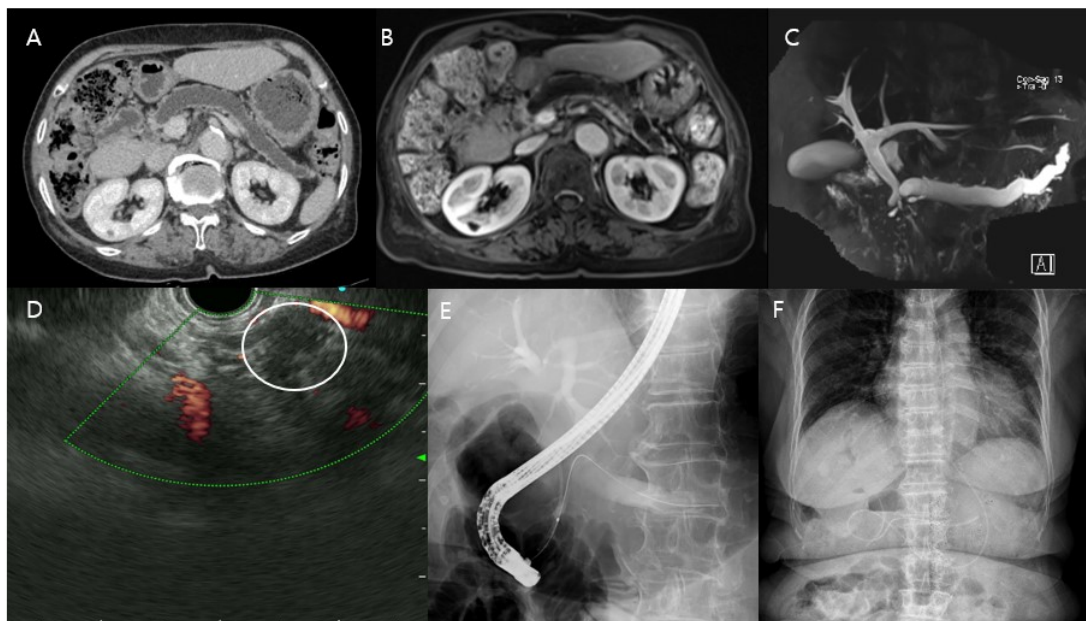


Figure 1. (A) Abdominal CT (A) showed diffuse dilation of pancreatic duct. (B, C) Arterial phase of pancreas magnetic resonance imaging and 3D Maximum intensity projection showed diffuse dilation of pancreatic duct. (D) EUS finding showed 18.5mm sized hypoechoic mass at the pancreatic neck (circle) with intervening vessel. (E) During endoscopic retrograde cholangiopancreatography (ERCP), pancreatogram showed diffuse p-duct dilation and obstruction at pancreas head. (F) Abdominal x-ray showing endoscopic nasopancreatic drainage (ENPD) catheter.