Atypical ductal hyperplasia of the pancreas associated with a stricture of the main pancreatic duct

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Introduction

Ductal adenocarcinoma accounts for at least 80% of all pancreatic tumors. Much work has concentrated on the recognition of the precursor lesions of pancreatic ductal adenocarcinoma. Atypical hyperplasia, or severe ductal dysplasia, defined as a severe cellular atypia of the duct epithelium with or without papillary proliferation, is thought to be such a precancerous lesion or to be equivalent to carcinoma in situ.1–4 We report a case of atypical ductal hyperplasia associated with a stricture of the main pancreatic duct. The atypical hyperplasia in our patient was present without frank carcinoma, which is extremely rare, because atypical hyperplasia is usually found in the vicinity of an invasive ductal adenocarcinoma.2,3

Case report

A 70-year-old man was admitted to our hospital because of abdominal pain with a serum pancreatic isoamylase level of 1114 U/L (normal, <115 U/L). He had not experienced any episodes of abdominal pain with hyperamylasemia before, and had no history of abdominal trauma. The abdominal pain resolved and the serum pancreatic isoamylase level returned to the normal range the next day; however, endoscopic retrograde cholangiopancreatography (ERCP) disclosed a stricture of the main pancreatic duct in the body of the pancreas (Fig. 1). Although neither computed tomography nor endoscopic ultrasonography showed any tumorous lesions in the pancreas, cytological evaluation of endoscopic brushings from the stenotic portion of the pancreatic duct at the time of ERCP revealed clusters of atypical cells highly suggestive of adenocarcinoma (Fig. 2a). The distal pancreas, including the stricture of the main pancreatic duct, was resected at operation. Microscopic examination of the stenotic pancreatic duct...
showed a hyperplastic epithelium without atypia, which was also found in the ductal branches of the resected pancreas. Dense fibrosis was recognized around the stenotic main duct (Fig. 2b). Atypical hyperplasia of the duct epithelium, however, was found in the distal (upstream) portion of the main pancreatic duct in close proximity to the stricture (Fig. 2c). The atypical hyperplasia extended along the main pancreatic duct into the ductal branches of the pancreatic tail, whereas normal epithelium lined the main pancreatic duct downstream of the stricture. Immunohistochemically, these atypical ductal cells did not stain for carcinoembryonic antigen (CEA). The pancreatic tissue distal to the stricture showed chronic pancreatitis with replacement of large areas of the acini by sclerotic tissue. In contrast, the parenchyma of the pancreas proximal to the stricture was well preserved, without distinct fibrosis or dilated ductules. The patient had an uneventful postoperative course. Cytological examination of the pancreatic juice obtained at the time of ERCP done 6 months after the surgery showed no atypical cells.

Fig. 1. Endoscopic retrograde pancreatogram demonstrating a stricture of the main pancreatic duct in the body of the pancreas (arrow)

Fig. 2. a Endoscopic brushing specimen from the pancreatic duct; b and c histopathological sections of the resected pancreas. a The cells demonstrate variability in nuclear size and shape, coarse nuclear chromatin, and disorderly nuclear crowding, highly suggestive of adenocarcinoma. b Dense fibrosis (asterisk) is recognized around the stenotic main pancreatic duct, where hyperplastic epithelium without obvious atypia is seen. c Atypical hyperplasia of the duct epithelium is found in the distal portion of the main pancreatic duct in close proximity to the stenosis. a Papanicolaou, ×100; b H&E, ×25; c H&E, ×50