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CASE REPORT

A case of pancreatic adenosquamous carcinoma with direct invasion to the gastrointestinal tract through the retention cyst wall: A rare case report

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Abstract

A 62-year-old man presented with a 7-cm cystic lesion with irregularly thickened cyst wall in contact with the pancreatic tail. The pancreatic tail was described as hypoechoic on endoscopic ultrasonography. The cyst subsequently increased rapidly to 13 cm, and surgery was performed. This revealed adenosquamous carcinoma in the pancreatic tail to have invaded the stomach and transverse colon along the cyst wall. The cyst was diagnosed as a retention cyst due to pancreatic tail tumor. Invasion of nearby organs by a pancreatic cancer via the retention cyst wall is very rare, but it is necessary to keep the potential for such progress in mind.

Case report

A 62-year-old man was referred to our hospital because of elevated carcinoembryonic antigen (CEA). He had hypertension, hyperlipidemia, and diabetes mellitus, and was a heavy drinker and smoker. The patient had no family history of pancreatic cancer or malignant tumor. His height and weight were 163.5 cm and 58.6 kg, respectively. His abdomen was soft and flat, but with a palpable mass in the left hypochondrium. His relevant laboratory data were HbA1c 8.0%, CEA 9.1 ng/mL, and CA19-9 305 U/mL. Computed tomography (CT) revealed a 7-cm unifocal cystic mass in the pancreatic tail with an irregularly thickened cyst wall (Fig. 1a). Endoscopic ultrasonography (EUS) showed hypoechoic pancreatic parenchyma near the cyst (Fig. 1b). Positron emission tomography-computed tomography (PET-CT) revealed high F18-fluorodeoxyglucose (FDG) uptake in the pancreatic tail and some parts of the cyst wall (Fig. 1c, d). We diagnosed this cyst as either a pseudocyst or a retention cyst from chronic pancreatitis or pancreatic tail cancer, and recommended surgery. Two months later, just before surgery, the cyst had rapidly increased to 13 cm (Fig. 1e). Distal pancreatectomy was performed, which revealed firm adhesions between the cyst wall and the stomach and transverse colon. Pathology of the cyst wall during surgery showed squamous cell carcinoma (SCC), and partial resections of the stomach and transverse colon were added. In gross findings, a white tumor 30 mm in length was located in the pancreatic tail as replacing the pancreas, and a round cystic lesion of 11.0 mm was evident at the front of the pancreatic tail (Fig. 1f). The cyst contained 1 L of dark-brownish serous fluid. Pathologically, moderately and poorly differentiated adenocarcinoma was present in the pancreatic tail mass, accompanied with SCC (Fig. 1g). The proportion of the SCC component was about 30%, and we diagnosed the tumor as adenosquamous carcinoma (ASC). The cyst wall was configured with thick fibrous connective tissue, which included carcinoma as a pancreatic tail lesion (Fig. 1h) and had an epithelial component replaced with carcinoma (Fig. 1i). The cyst was diagnosed as a retention cyst from pancreatic tail cancer. The carcinoma had invaded the stomach and colon (Fig. 1j) via the cyst wall. The final diagnosis was as follows: moderately differentiated ASC, pancreas (tail-body), pT3, pCH-, pDU-, pS1, pRp1,

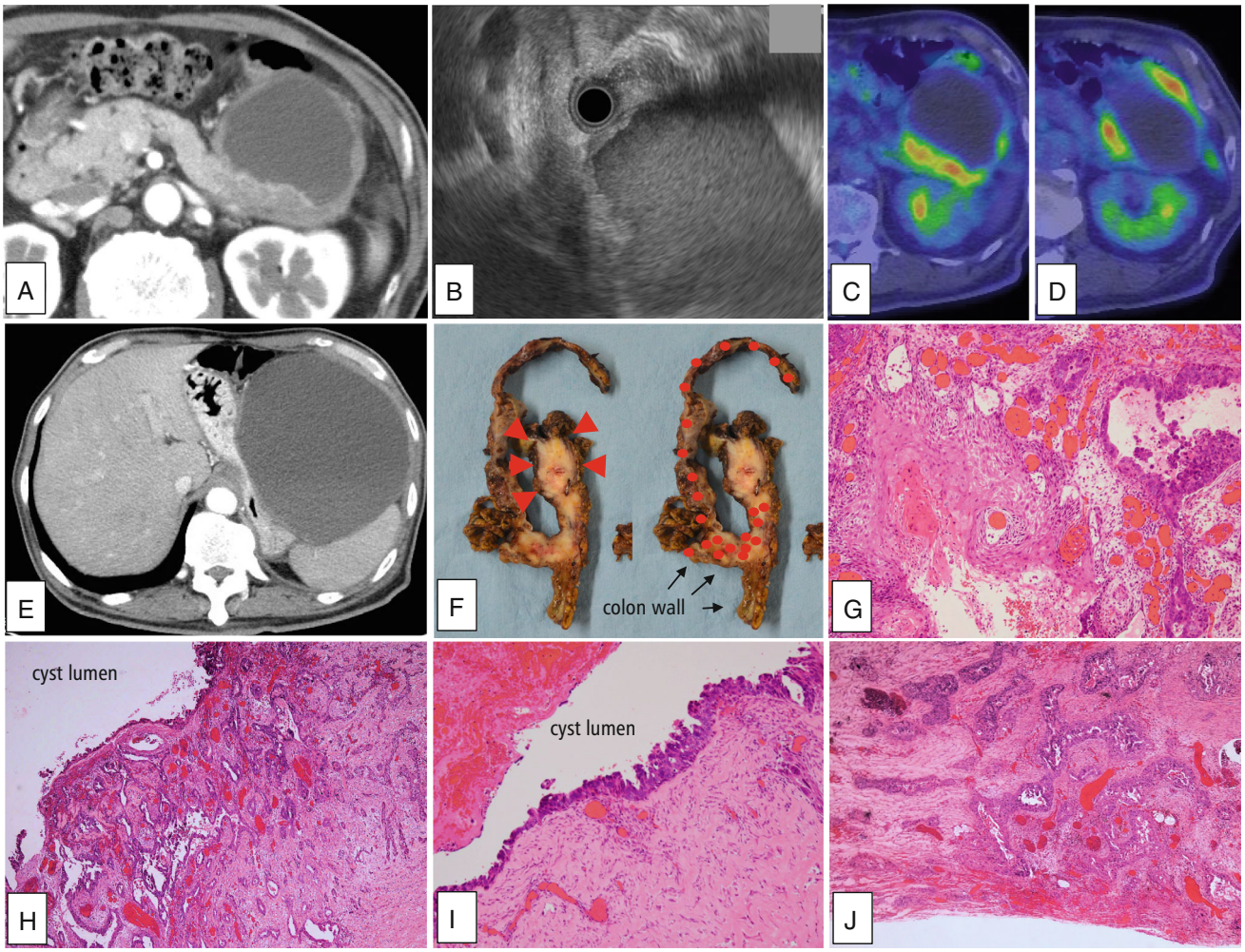

Figure 1 Computed tomography (CT) revealed a round cyst of 7 cm with irregular and thick wall (a). The pancreatic tail was replaced by a hypoechoic lesion 3 cm in length (b). The pancreatic tail and parts of the cyst wall had high F18-fluorodeoxyglucose uptake (c, d). In 2 months, the cyst grew to 13 cm, seen on preoperative CT (e). There was a 30-mm tumor (arrows) in the pancreatic tail that had diffusely invaded to the stomach and transverse colon via the cyst wall (points) (f). Pathologically, adenocarcinomas with squamous carcinoma (30%) were evident in the pancreatic tail (g) and cyst wall (h). The cyst had an epithelial component replaced with adenocarcinoma (i). The carcinoma had invaded the transverse colon wall via the cyst wall (j).

pPVsp0, pAsp0, pPL1, pOO1(transverse colon and stomach). There were metastatic carcinomas in 10 of 26 lymph nodes.

The patient was treated with postoperative chemotherapy, but the cancer recurred in the liver and peritoneum, and he died 10 months after the surgery.

Discussion

We experienced a case with pancreatic adenosquamous carcinoma (PASC) that invaded nearby organs via the retention cyst wall. The potential for pancreatic cancer to invade in this way needs to be kept in mind.

When we encounter a cystic tumor, we should raise as differentiation diseases mucinous cystic neoplasm, intraductal papillary mucinous neoplasm, degeneration of tumor (e.g., neuroendocrine tumor, solid pseudopapillary neoplasm, ASC, and anaplastic carcinoma), and pseudocyst or retention cyst from pancreatic neoplasm.

There can be some difficulties in differentiating retention cysts/pseudocysts from cystic degenerations of tumors in imaging, especially in small cysts. In our case, we preoperatively diagnosed the cyst as a retention cyst. Our reasoning was as follows. First, the shape of the pancreatic tail adjacent to the cyst was almost normal, and the hypodense lesion in the CT and the hypoechoic lesion in EUS were separated from the cyst. Thus, we suspected that the cystic lesion and pancreatic lesion were different. Second, the wall thickness of the cyst was mild and relatively uniform, so there was a considerable liquid component and very little solid component. Third, in most cystic degeneration of a tumor, the cystic lesion may be induced in the center of the tumor and in multiple locations in the tumor. Pathologically, there was little mucin production or ovary-like stroma. In addition, the carcinoma had

diffusely invaded the fibrous cystic wall and the epithelial component in the cyst inner surface. Thus, we diagnosed this cyst as a retention cyst invaded by pancreatic tail carcinoma.

PASC is a relatively rare histologic type of pancreatic cancer that constitutes 1–4% of all pancreatic exocrine malignancies[1]. One of its features is abundant tumor necrosis due to a rapid cell cycle[2–4] and hence sometimes a cyst forms in the tumor. That said, the cyst in our case was not from this mechanism, but was a retention cyst from a pancreatic tail tumor. We searched PubMed for case reports of pancreatic ductal adenocarcinoma having invaded along a retention cyst or pseudocyst wall between 2003 and 2022 using the keyword: "pancreatic cancer," and the Japanese database *Igakutyuozassi* for the same period using the keyword: "*suigann*." These searches resulted in just one case report,[5] in which a moderately tubular adenocarcinoma progressed into the epithelium of the retention cyst. The tumor did not invade the whole cyst wall and did not reach any nearby organ.

The most important finding from the present case is that pancreatic cancer had invaded the retention cyst wall and reached nearby organs (stomach and colon). If we misdiagnose such a cyst as a retention cyst or a pseudocyst without malignancies and perform cyst drainage, there is possible induction of peritoneal metastasis. If we can anticipate the possibility of such progress, we can make better preparation for surgery. In such a case, a strong, irregular, and thick cyst wall accompanied by high FDG uptake in PET-CT might be an indication to suspect invasion of the cyst wall and nearby organs.

In conclusion, we need to account for possible invasion of the cyst wall and nearby organs in the treatment of pancreatic cancer that is accompanied by a retention cyst or pseudocyst.

Ethical approval

The identity of the patient has been protected.

Patient consent

Written informed consent was obtained from the patient's son for publification of this case report and accompanying images.

Data availability statement. The datasets used and /or analyzed during the current study are available from the corresponding author on reasonable request.

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