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Portal vein tumor thrombosis after pancreaticoduodenectomy: an extremely rare case of recurrence of pancreatic neuroendocrine neoplasm

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A 79-year-old man was referred to our hospital with suspected portal vein tumor thrombosis (PVTT) after pancreaticoduodenectomy for pancreatic neuroendocrine neoplasm. He underwent subtotal stomach-preserving pancreaticoduodenectomy with a modified Child reconstruction for pancreatic neuroendocrine neoplasm G2 (Ki-67 index of 15%) without portal vein invasion 4 years ago (Figure 1a) and underwent regular follow-up in the previous hospital. Computed tomography revealed an enhanced mass of 3 cm in diameter in the portal vein at the confluence of the splenic vein (Figure 1b). Somatostatin receptor scintigraphy showed a hot spot in the portal vein and no evidence of distant metastasis. We diagnosed PVTT recurrence and performed portal vein resection and reconstruction using a left external iliac vein graft (Figure 2). We could isolate the portal vein from the jejunal loop and preserve the pancreatojejunostomy and choledochojejunostomy. The postoperative course was uneventful. Pathological examination revealed recurrent neuroendocrine neoplasm G2 (Ki-67 index of 15%). We reviewed the pathological specimens of the primary tumor and found venous tumor thrombi.

Venous tumor thrombus can occur in association with several tumor types, such as hepatocellular carcinoma, renal cell carcinoma, and pancreatic neuroendocrine neoplasm. It occurs not only with primary tumors, but also with metastasis or recurrent

tumors (1). PVTT was reported in 33% of patients with pancreatic neuroendocrine neoplasms (2), but there has been no report of a recurrence localized in the portal vein after pancreatectomy for pancreatic neuroendocrine neoplasms. Although the mechanism of this extremely rare recurrence remains unclear, we speculate that it was caused by a remnant microtumor thrombus at the margin of the portal vein branch. Venous thrombectomy or portal vein resection may be suitable treatments (3), but these procedures are complicated by postoperative adhesion and the presence of the jejunal loop after pancreaticoduodenectomy. Moreover, no study has comprehensively evaluated the prognosis after resection for pancreatic neuroendocrine neoplasms with PVTT.

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Figure legends

Figure 1

a: CT image of the primary tumor. Arrow indicates the superior mesenteric vein. Arrowhead indicates the primary tumor. b: CT image shows an enhanced mass (3 cm in diameter) in the portal vein at the confluence of the splenic vein. Arrow indicates the superior mesenteric vein. Arrowhead indicates the splenic vein.

Figure 2

Operative findings. a: Egg-shaped dilation of the portal vein. Grey arrowheads indicate the dilated portal vein due to tumor thrombus. Grey arrow indicates the portal vein. White arrow indicates the superior mesenteric vein. White arrowhead indicates the splenic vein. b: The portal vein was reconstructed using a left external iliac vein graft. We did not reconstruct the splenic vein. White arrow indicates the portal vein. White arrowhead indicates the superior mesenteric vein. Grey arrow indicates a left external iliac vein graft.

Figure 1

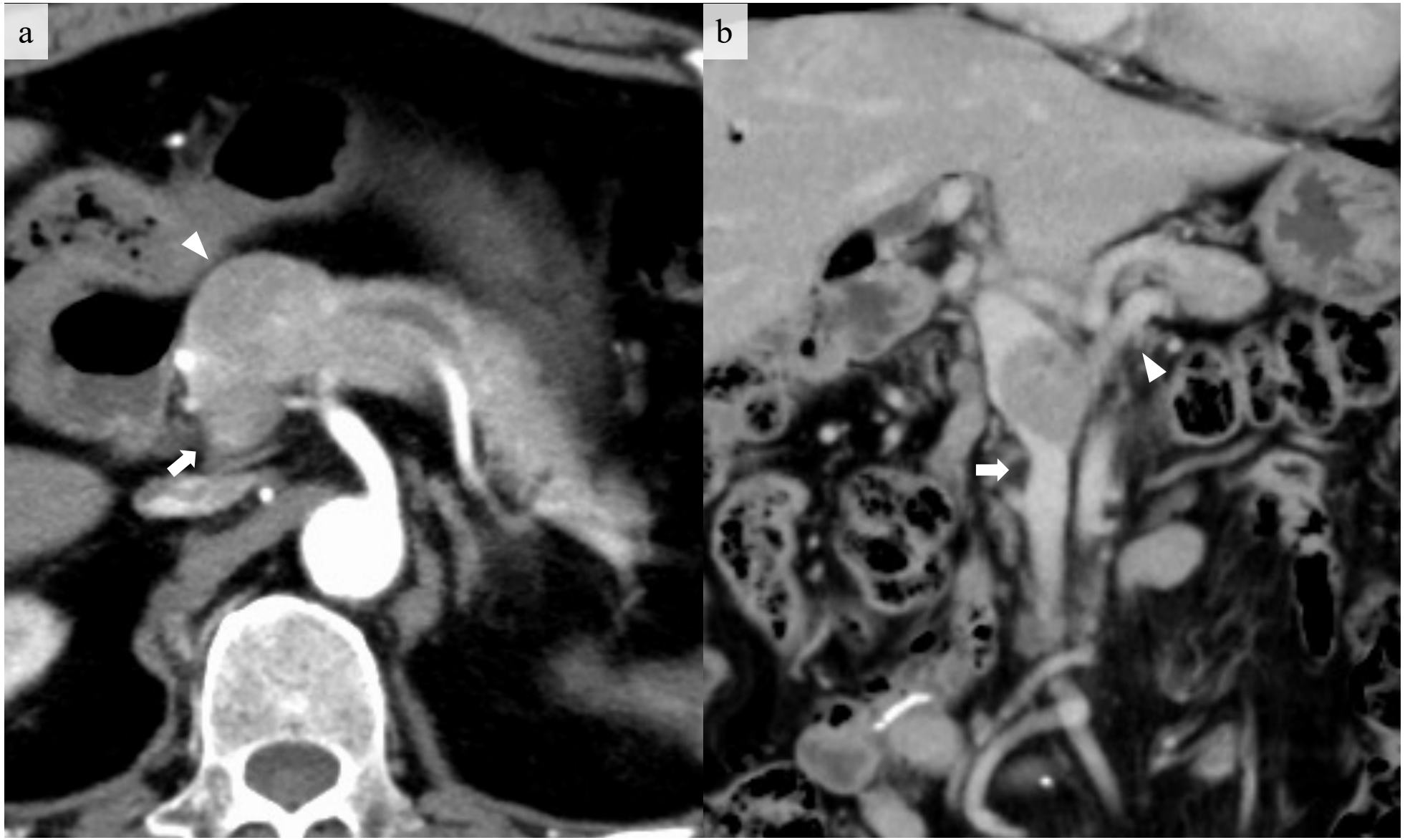

Figure 2