

## Re-recurrence after distal gastrectomy for recurrence caused by needle tract seeding during endoscopic ultrasound-guided fine-needle aspiration of a pancreatic adenocarcinoma



**Fig. 1** Endoscopic ultrasound-guided fine-needle aspiration was performed and involved three punctures using a 22-gauge needle (Boston Scientific, Tokyo, Japan). The procedure was completed without complication, and adenocarcinoma was diagnosed.

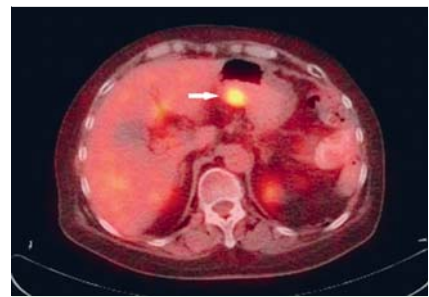
A 78-year-old woman, who was suspected of having pancreatic cancer, underwent endoscopic ultrasound-guided fine-needle aspiration (EUS-FNA). Three punctures were applied using a 22-gauge needle (Boston Scientific, Tokyo, Japan) (Fig. 1). The procedure was completed without complication, and adenocarcinoma was diagnosed. Distal pancreatectomy was performed and the lesion was confirmed as an infiltrating pancreatic duct cancer pT3N0M0, pStage IIA.

On upper gastrointestinal endoscopy 6 months later, a lesion, which was thought to be recurrence caused by needle tract seeding during EUS-FNA, could be seen in the lower posterior wall of the stomach

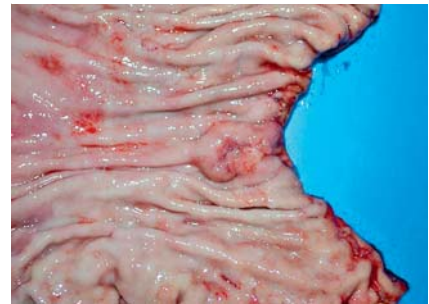
body (Fig. 2). Positron emission tomography (PET) showed abnormal accumulation of fluorine-18-deoxyglucose (FDG) locally (Fig. 3). Distal gastrectomy was subsequently performed (Fig. 4), and the lesion was confirmed to be histopathologically similar to the tissue of the previous pancreatic cancer.

Adjuvant chemotherapy using S-1 (tegafur/gimeracil/oteracil) was administered, and no recurrence was observed during the subsequent course. At 21 months after distal gastrectomy the patient complained of general malaise. PET showed abnormal FDG accumulation locally in the gastric wall (Fig. 5). On upper gastrointestinal endoscopy, a lesion, which was thought to be re-recurrence, could be seen in the upper posterior wall of the operated stomach body (Fig. 6). Biopsies showed adenocarcinoma, which was thought to be metastasis in the gastric wall. Total gastrectomy was planned, but the patient refused this treatment and continued with chemotherapy.

Eight cases of seeding during EUS-FNA for pancreatic cancer have been reported [1–8]. In three cases, curative surgical resection of the recurrent seeded lesion was performed [5–7]. Since the long-term prognosis of radical surgical resection of recurrent lesions seeded into the stomach by EUS-FNA is unknown, this issue has not been fully discussed. To our knowledge,

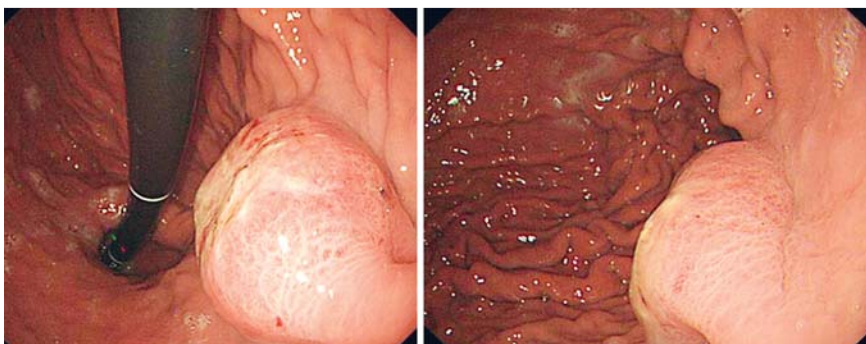


**Fig. 3** Positron emission tomography/computed tomography indicated abnormal fluorine-18-deoxyglucose accumulation locally in the posterior wall of the body of the stomach (arrow).

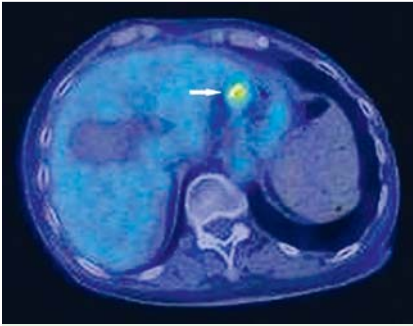


**Fig. 4** Distal gastrectomy was performed and the 18×14 mm lesion was found to be histopathologically similar to the tissue of the previous pancreatic cancer. The recurrence was thought to be caused by needle tract seeding during endoscopic ultrasound-guided fine-needle aspiration and implantation in the stomach.

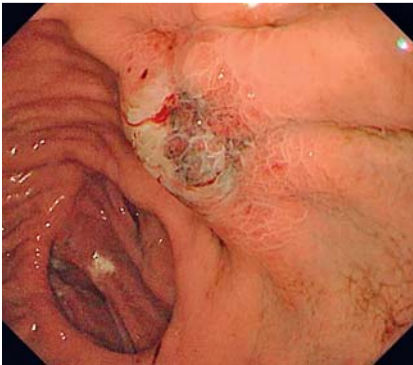
the present case is the first report of repeated recurrence of these types of lesions in the stomach after radical surgical resection. The very existence of such cases suggests that the option of performing total gastrectomy first must be considered rather than simple surgical resection of the seeded lesions.



**Fig. 2** On upper gastrointestinal endoscopy 6 months later, a lesion was observed in the lower posterior wall of the stomach body. The lesion was thought to be recurrence of the tumor caused by needle tract seeding during endoscopic ultrasound-guided fine-needle aspiration.



**Fig. 5** Positron emission tomography scan 21 months after distal gastrectomy showed abnormal fluorine-18-deoxyglucose accumulation in the gastric wall (arrow).



**Fig. 6** On upper gastrointestinal endoscopy, a lesion, which was thought to be re-recurrence, was observed in the upper posterior wall of the operated stomach body. Biopsies showed adenocarcinoma, which was thought to be metastasis in the gastric wall.

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**Competing interests:** None

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## References

- 1 Paquin SC, Garipey G, Lepanto L et al. A first report of tumor seeding because of EUS-guided FNA of a pancreatic adenocarcinoma. *Gastrointest Endosc* 2005; 61: 610–611
- 2 Ahmed K, Sussman JJ, Wang J et al. A case of EUS-guided FNA-related pancreatic cancer metastasis to the stomach. *Gastrointest Endosc* 2011; 74: 231–233
- 3 Chong A, Venugopal K, Segarajasingam D et al. Tumor seeding after EUS-guided FNA of pancreatic tail neoplasia. *Gastrointest Endosc* 2011; 74: 933–935
- 4 Katanuma A, Maguchi H, Hashigo S et al. Tumor seeding after endoscopic ultrasound-guided fine-needle aspiration of cancer in the body of the pancreas. *Endoscopy* 2012; 44: E160–E161
- 5 Tomonari A, Katanuma A, Matsumori T et al. Resected tumor seeding in stomach wall due to endoscopic ultrasonography-guided

fine needle aspiration of pancreatic adenocarcinoma. *World J Gastroenterol* 2015; 21: 8458–8461

- 6 Sakurada A, Hayashi T, Ono M et al. A case of curatively resected gastric wall implantation of pancreatic cancer caused by endoscopic ultrasound-guided fine-needle aspiration. *Endoscopy* 2015; 47: E198–199
- 7 Iida T, Adachi T, Nakagaki S et al. Needle tract implantation after endoscopic ultrasound-guided fine-needle aspiration of a pancreatic adenocarcinoma. *J Gastroenterol Hepatol* 2016; 31: 285
- 8 Kita E, Yamaguchi T, Sudo K et al. A case of needle tract seeding after EUS-guided FNA in pancreatic cancer, detected by serial positron emission tomography/CT. *Gastrointest Endosc*. In press 2016. DOI: 10.1016/j.gie.2016.01.060

## Bibliography

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