Isolated oesophageal adenocarcinoma metastasis at percutaneous endoscopic gastrostomy (PEG) site

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DESCRIPTION

A 67-year-old man with progressive dysphagia and 15% weight loss was diagnosed with a partly obstructing oesophageal adenocarcinoma arising in an inlet patch. This extended for 7 cm from the postcricoid oesophagus, and was staged as cT3N3M0. Following bougie dilation, a percutaneous endoscopic gastrostomy (PEG) tube was inserted for nutritional support before commencing radiation (50.4 Gy) and chemotherapy (3 cycles of FOLFOX (Folinic acid, 5-Fluorouracil and Oxaliplatin)) for 6 weeks. He had a complete endoscopic and radiological response. Supplemental overnight PEG feeding was continued.

On clinical review 3 months later, a tumour mass, with purulent discharge, was evident beside the PEG tube (*figure 1A*). This was confirmed as adenocarcinoma. On Positron Emission Tomography-Computed Tomography (PET-CT), 18-fluorodeoxyglucose (FDG) uptake was localised to this site and extended to the stomach (*figure 1B*). Following discussion at the multidisciplinary team meeting (MDT), he underwent an en bloc resection, including the anterior abdominal and anterior gastric wall around the internal retention bolster. He remains disease-free 5 months later.

Proximal oesophageal cancers are predominantly squamous cell cancer (SCC), with adenocarcinoma constituting approximately 10% of the cases.¹ An inlet patch is an area of heterotopic gastric mucosa found in the proximal oesophagus in up to 10% of the population, and adenocarcinoma can develop from this patch, although rarely.^{2,3} Adenocarcinoma is not as sensitive to radiation as SCC, but surgery for this case would have required resection of the larynx, pharynx and oesophagus, and in combination with locally advanced disease, these considerations underpinned a management decision to treat with radical chemoradiation.

The likely causation of localised metastatic tumour development in this case was malignant cell capture on the PEG bolster when drawn through the obstructing tumour site, with implantation in the stomach wall, and subsequent external progression. A meta-analysis reports the overall rate of PEG site metastasis from upper aerodigestive tract cancers as approximately 0.5%, with 74 published cases; however, the majority are from head and neck cancer, and all previous reports of gastrostomy site metastasis from oesophageal primary are SCC, with 37% being in association with other metastases.⁴⁻⁶ Stockeld *et al* reported an interesting case of adenocarcinoma in a gastric conduit in a patient with a prior PEG, possibly also representing implantation at insertion.⁷

Figure 1 (A) Metastatic adenocarcinoma at percutaneous endoscopic gastrostomy (PEG) site from a primary oesophageal tumour. (B) Positron Emission Tomography-Computed Tomography (PET-CT), image showing 18-fluorodeoxyglucose (FDG) avid metastasis at the PEG insertion site.

Different methods of PEG placement do not differ significantly in the incidence of development of abdominal wall metastasis.⁸ A study evaluating

Learning points

- ▶ Seeding of cancer cells on a percutaneous endoscopic gastrostomy (PEG) tube, particularly the internal retention bolster, can occur, especially when drawn across an obstructing tumour; however, implantation and tumour development are rare.
- ▶ Inlet patches may rarely be a source of adenocarcinoma in the proximal oesophagus. If present, they should be biopsied for evidence of metaplasia, dysplasia or adenocarcinoma.
- ▶ Surgical treatment with en bloc resection of an isolated PEG site metastasis is a justifiable option, both to aim to render the patient disease free and to palliate symptoms, in this case the discomfort and offensive odour from the purulent necrotic tumour.

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malignant cell seeding at PEG site in patients with oropharyngeal and oesophageal cancers showed that cancer cell transfer can be demonstrated on cytology in up to 22.5% of the cases, which at 3–6-month follow-up reduces to 9.4%; however, no patient in this study developed a visible tumour mass.⁹ The local factors determining successful implantation of tumour cells and progression in this case are unclear.

Notwithstanding, the representation at 3 months was localised clinically and on PET-CT to the PEG site. The primary site was tumour free based on imaging, endoscopy and biopsy. At MDT, all approaches were discussed, including further chemotherapy and radiotherapy, but surgery was selected, to render him disease free, and palliate from the unpleasant symptoms of a necrotic, purulent tumour.

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REFERENCES

- 1 de Vos-Geelen J, Geurts SM, van Putten M, *et al.* Trends in treatment and overall survival among patients with proximal esophageal cancer. *World J Gastroenterol* 2019;25:6835–46.
- 2 Peitz U, Vieth M, Evert M, *et al.* The prevalence of gastric heterotopia of the proximal esophagus is underestimated, but preneoplasia is rare - correlation with Barrett's esophagus. *BMC Gastroenterol* 2017;17:87.
- 3 Orosey M, Amin M, Cappell MS. A 14-year study of 398 esophageal adenocarcinomas diagnosed among 156,256 EGDs performed at two large hospitals: an inlet patch is proposed as a significant risk factor for proximal esophageal adenocarcinoma. *Dig Dis Sci* 2018;63:452–65.
- 4 Siu J, Fuller K, Nadler A, *et al.* Metastasis to gastrostomy sites from upper aerodigestive tract malignancies: a systematic review and meta-analysis. *Gastrointest Endosc* 2020;91:e17:1005–14.
- 5 Rowell NP. Tumor implantation following percutaneous endoscopic gastrostomy insertion for head and neck and oesophageal cancer: review of the literature. *Head Neck* 2019;41:2007–15.
- 6 Vincenzi F, De Caro G, Gaiani F, *et al.* Risk of tumor implantation in percutaneous endoscopic gastrostomy in the upper aerodigestive tumors. *Acta Biomed* 2018;89:117–21.
- 7 Stockeld D, Fagerberg J, Granström L, *et al.* Percutaneous endoscopic gastrostomy for nutrition in patients with oesophageal cancer. *Eur J Surg* 2001;167:839–44.
- 8 Montes de Oca MK, Nye A, Porter C, *et al.* Head and neck cancer PEG site metastases: association with PEG placement method. *Head Neck* 2019;41:1508–16.
- 9 Ellrichmann M, Sergeev P, Bethge J, *et al.* Prospective evaluation of malignant cell seeding after percutaneous endoscopic gastrostomy in patients with oropharyngeal/esophageal cancers. *Endoscopy* 2013;45:526–31.

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