Unexpected cause of dysphagia

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DESCRIPTION

An 84-year-old woman had a follow-up chest X-ray to ensure resolution of a previous community acquired pneumonia. This revealed a potential mass lesion and a subsequent CT scan identified an unexpected abnormality for which she was admitted to the hospital. On questioning, she reported progressive dysphagia, vomiting and weight loss over the 3 weeks prior to her admission. She is an ex-smoker (60 pack-years) and had a background of chronic obstructive pulmonary disease, stage 3A chronic kidney disease and type 2 diabetes mellitus. Her medications included bisoprolol, rosuvastatin, omeprazole, inhaled beclometasone/formoterol (Fostair) and salbutamol.

Chest auscultation revealed bronchial breath sounds in the right upper zone. Laboratory tests demonstrated a microcytic (mean cell volume 77.3 fL) anaemia (haemoglobin 102 g/L), lymphocytosis ($14.3 \times 10^9/L$), hypoalbuminaemia (29 g/L) and chronic renal impairment—estimated glomerular filtration rate 45 mL/min/1.73 m². Adjusted serum calcium was normal.

Review of her cross-sectional imaging identified a large area of dense consolidation in the right upper lobe associated with a large right sided defect in the thoracic oesophagus (figure 1A). There was extravasation of oral gastrograffin from the oesophagus to the lung parenchyma but the patient experienced no adverse reaction from the ingested contrast. The oesophagus was abnormally thickened both above and below the defect (figure 1B). A malignant process was suspected manifesting with an oesophago-parenchymal fistula, a subtype of tracheo-oesophageal fistula (TOF). A subsequent endoscopy revealed a large necrotic cavity with near-complete obliteration of oesophageal continuity between 18 cm and 22 cm from the incisors (figure 1C,D). Short-term parenteral nutrition was initiated, pending multidisciplinary team discussion regarding candidacy for definitive management or supportive care with enteral feeding options given that the gastrointestinal distal to the defect remained intact.

Our patient was diagnosed with a malignant oesophago-parenchymal fistula. Histology was consistent with a squamous cell carcinoma with no background dysplasia in keeping with lung origin. Malignant TOF in patients with lung carcinoma is uncommon—developing in less than 1% of as opposed to 5%–15% of patients with oesophageal cancer.^{1 2} It is associated with a poor prognosis and mean survival ranges from 1 to 6 weeks when treated supportively.³

Definitive surgical management options are invasive and moreover patients with malignant fistulae often have inoperable disease at presentation. A palliative approach is usually advocated with placement of a self-expanding metal stent (SEMS) being the preferred approach.⁴ SEMS placement allows patients to resume oral diet. Oesophageal stent placement can be combined with a parallel tracheal/bronchial stent (double stenting) if concurrent airway stenosis is present (to avoid paradoxical airway compromise as the oesophageal stent achieves full patency) or if fistula occlusion is not achieved by single stenting alone.³

There is an emerging role for endoscopic modalities including endoluminal vacuum-assisted closure and endoscopic over-the-scope clip placement, but their use has been limited to those with postoperative leaks and non-malignant aetiology.^{5 6}

Our patient was managed supportively. Oesophageal stenting was deemed difficult due to the proximity of the defect to the combined aerodigestive tract; instead, a nasojejunal feeding tube was placed to allow enteral feeding. She unfortunately died 4 weeks after diagnosis.

Figure 1 (A) (Coronal reformat CT image with oral contrast in narrow windows) and (B) (axial CT image with oral contrast in mediastinal soft tissue windows)—images depict an obvious defect in the oesophagus with arrows marking the fistula site, along with right upper lobe volume loss and apical cystic cavity changes contiguous with the para-oesophageal cavity. (C) An endoscopic view depicting the near complete obliteration of the oesophageal lumen and a large adjacent necrotic cavity. (D) An endoscopic view depicting a Jagwire traversing the defect and intubating the distal oesophageal lumen.

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Learning points

- Malignant tracheo-oesophageal fistula secondary to a primary lung cancer is uncommon.
- Management of trachea-oesophageal fistula is often palliative due to the stage of cancer at presentation and performance status.
- Where feasible, placement of a self-expanding metal stent allows oral intake and some restoration of quality of life.

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