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# Proximal Migration of a Fully Covered Oesophageal Stent Into the Hypopharynx Causing Life-Threatening Laryngeal Inlet Obstruction: A Report of a Rare Case

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## Abstract

Oesophageal stent migration is common, but almost always distal. Proximal migration into the hypopharynx sufficient to occlude the laryngeal inlet is exceptionally rare. To our knowledge, only one case with a similar clinical presentation has been reported. We present a rare case of proximal migration of an oesophageal stent into the hypopharynx, resulting in severe, potentially life-threatening upper airway obstruction. Emergency fibreoptic laryngoscopy demonstrated the migrated stent covering the laryngeal inlet. The stent was retrieved and the airway secured.

**Categories:** Otolaryngology, Palliative Care, Oncology
**Keywords:** hypopharyngeal carcinoma, oesophageal perforation, oesophageal stent, radiation stricture, stent migration, upper airway obstruction

## Introduction

Self-expanding metallic stents (SEMS) are commonly used to relieve dysphagia resulting from oesophageal strictures and carcinoma. They are also used as a short-term measure for oesophageal perforations, fistulas, and leaks [1]. Fully covered SEMS (FCSEMS) are preferred when early retrieval is intended, because they do not become embedded in the oesophageal wall [1]; the covering prevents tissue ingrowth at the cost of an increased chance of migration. There is a greater frequency of migration in fully covered stents compared to partially covered stents (25.3% versus 10.9% in one multicentre series) [2]. A migration rate of up to 40% is reported in the literature when stents are used for benign indications [3,4].

Migration is usually distal, into the stomach or intestines, presenting with recurrent dysphagia or intestinal obstruction [3,4]. Proximal migration is rare, and proximal migration far enough to reach the hypopharynx and occlude the laryngeal inlet is exceptionally rare. This type of migration is possible when the stent is placed in the proximal oesophagus near the upper oesophageal sphincter (UES). Proximal oesophageal stenting has a higher risk of complications, which include aspiration pneumonia and fistula formation [5]. In that setting, a comparatively small migration converts an oesophageal device into an airway foreign body. Airway complications of oesophageal stents are uncommon and usually arise indirectly, most often through external tracheobronchial compression [6] or recurrent laryngeal nerve compromise [7].

We describe a patient with a treated hypopharyngeal squamous cell carcinoma in whom a high cervical oesophageal stent, placed to seal an iatrogenic perforation, migrated proximally and obstructed the laryngeal inlet, presenting as an emergent and life-threatening airway obstruction.

## Case Presentation

A 40-year-old woman presented with a biopsy-proven moderately differentiated squamous cell carcinoma of the posterior hypopharyngeal wall. Contrast-enhanced computed tomography (CT) of the neck demonstrated malignant mural thickening of the posterior hypopharyngeal wall extending into the cervical oesophagus, with centrally necrotic left level II, III, and IV cervical lymph nodes and mildly enlarged bilateral level IIa nodes (Figure *1*). Positron emission tomography confirmed the same distribution of disease without distant metastases. Disease was staged as locally advanced T4a nodal-positive hypopharyngeal carcinoma.

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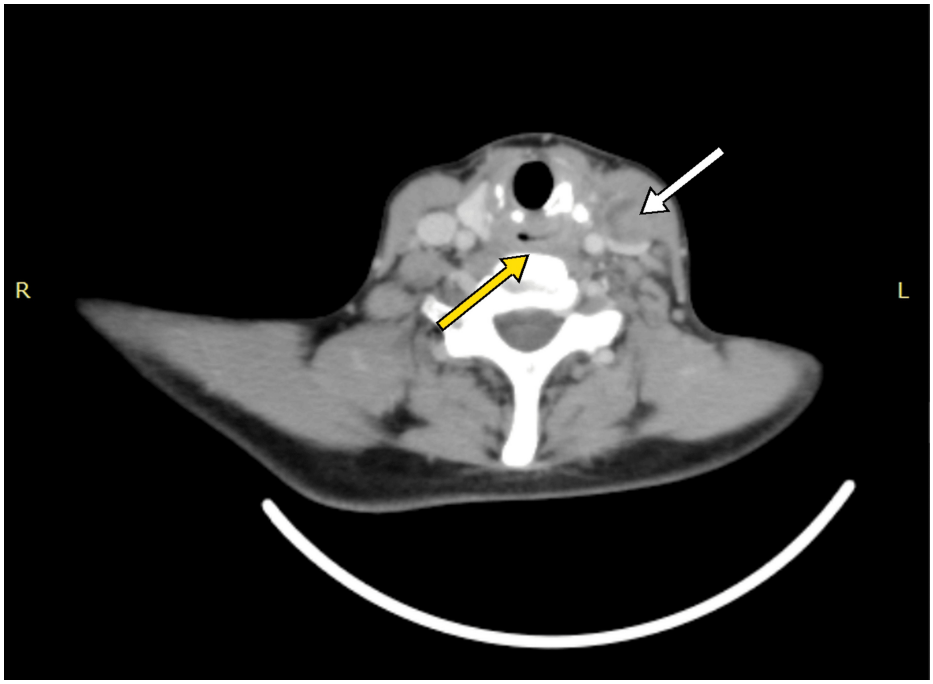



**FIGURE 1: Baseline disease on contrast-enhanced CT of the neck**

Axial contrast-enhanced CT of the neck at presentation, showing malignant mural thickening of the posterior hypopharyngeal wall with extension into the cervical oesophagus (yellow arrow), and a centrally necrotic left cervical lymph node (white arrow).

CT, computed tomography

Because of anticipated treatment-related dysphagia, upper gastrointestinal endoscopy was performed prior to treatment. A post-cricoid tumour was visualised and traversed easily with a narrow-calibre endoscope; the stomach and duodenum were normal. A 20 Fr percutaneous endoscopic gastrostomy (PEG) tube was placed for nutritional support.

She completed definitive chemoradiotherapy approximately seven months before stent insertion. Surveillance magnetic resonance imaging (MRI) of the face and neck in February 2026 showed post-treatment change without definitive residual or recurrent hypopharyngeal disease (Figure *2*), and repeat MRI in May 2026 confirmed no evidence of residual or recurrent hypopharyngeal disease. She remained PEG-dependent for nutrition.

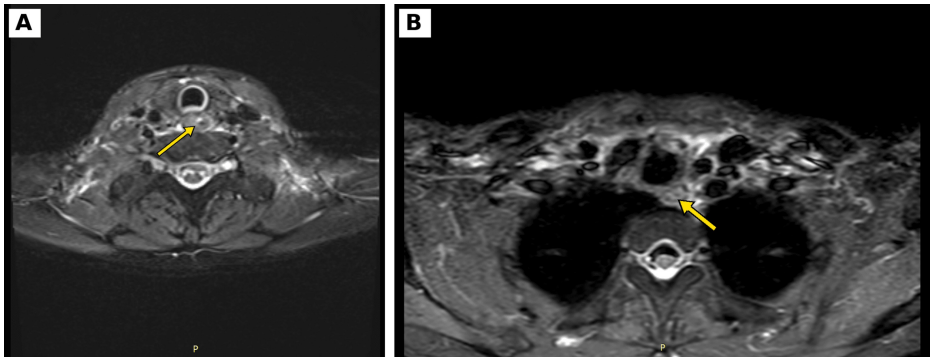



**FIGURE 2: Surveillance MRI after chemoradiotherapy**

(A) Axial MRI in February 2026, showing post-treatment change without definite residual or recurrent tumour at the post-cricoid region (arrow). (B) Repeat axial MRI in May 2026, showing no residual or recurrent hypopharyngeal disease in the cervical oesophagus (arrow).

MRI, magnetic resonance imaging

On day 0 (day of stent insertion), approximately seven months after completing chemoradiotherapy, endoscopy was undertaken with a view to PEG removal. A tight stricture was encountered 16 cm from the incisors, consistent with a radiation-induced cervical oesophageal stricture; even a paediatric endoscope could not be negotiated across it, and PEG removal was abandoned. Immediately afterwards, surgical emphysema was palpable in the neck, raising the suspicion of iatrogenic oesophageal perforation. The patient was kept nil by mouth and nil per PEG, and urgent CT of the neck and chest was arranged (Figure 3).

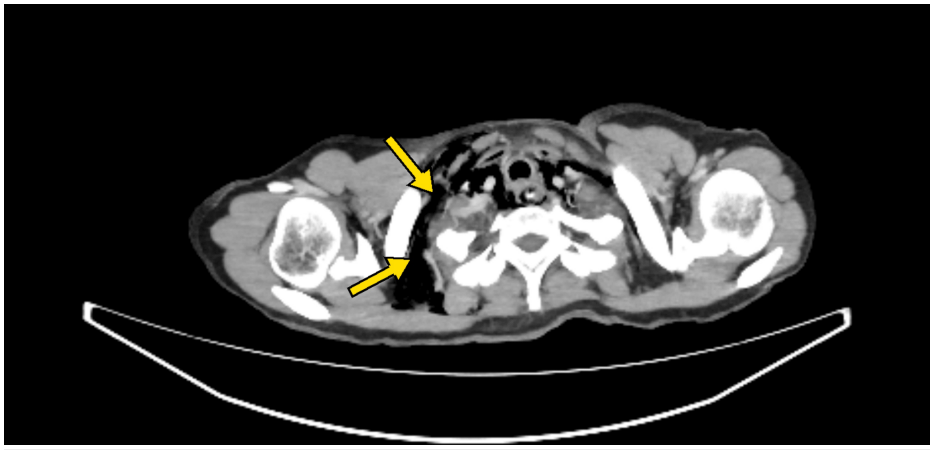


**FIGURE 3: Iatrogenic oesophageal perforation**

Axial CT of the neck performed immediately after the failed PEG removal, showing surgical emphysema tracking along the deep neck spaces (arrows), consistent with iatrogenic oesophageal perforation.

CT, computed tomography; PEG, percutaneous endoscopic gastrostomy

The perforation was managed endoscopically on the same day. An 18 × 130 mm fully covered self-expanding metallic oesophageal stent was deployed across the stricture to seal the defect. Because the stricture lay high, the proximal end of the stent was necessarily positioned at 13 cm from the incisors, immediately below the aryepiglottic folds (Figure 4).

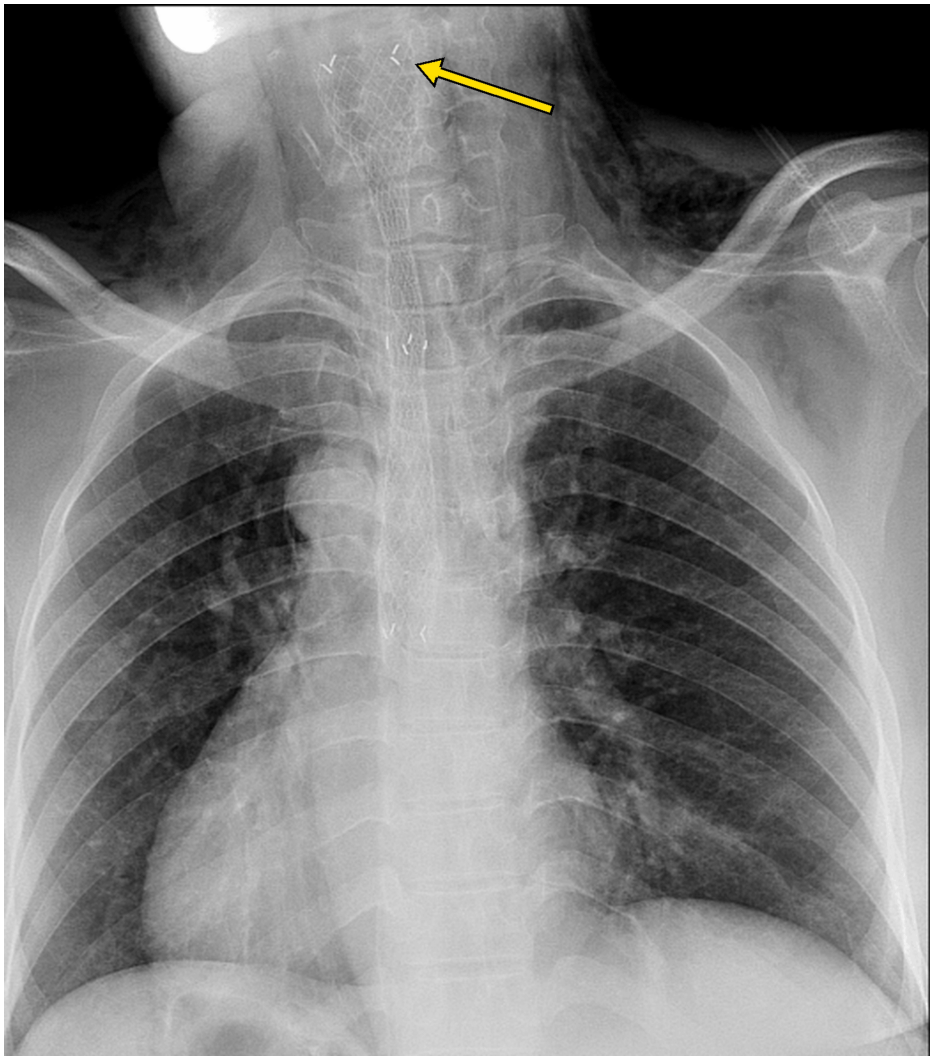


**FIGURE 4: Stent in intended position**

Post-deployment frontal radiograph showing the 18 × 130 mm fully covered self-expanding metallic stent spanning the stricture, with the proximal flare (arrow) at approximately 13 cm from the incisors, immediately below the aryepiglottic folds.

She received intravenous fluids, broad-spectrum antibiotics, and analgesia, and a repeat procedure was planned at six weeks for stent retrieval.

The immediate post-procedural course was uncomplicated. On the first day, she reported mild throat and chest discomfort without dyspnoea or fever; oxygen saturation was 98% on room air, and cervical and upper abdominal crepitus was marked and monitored. By the third day, the crepitus had not extended beyond the marked boundaries, PEG feeds had been resumed and were tolerated, and she was discharged.

She attended the emergency assessment area on days 32 and 36 after stent insertion with shortness of breath and cough. On both occasions, she was managed symptomatically and discharged. CT of the neck, chest, and abdomen on day 37 after stent insertion reported the oesophageal stent in situ, no evidence of persisting oesophageal perforation, and no visceral or osseous metastases; the airway was described as patent in the contemporaneous clinical documentation (Figure *5*).

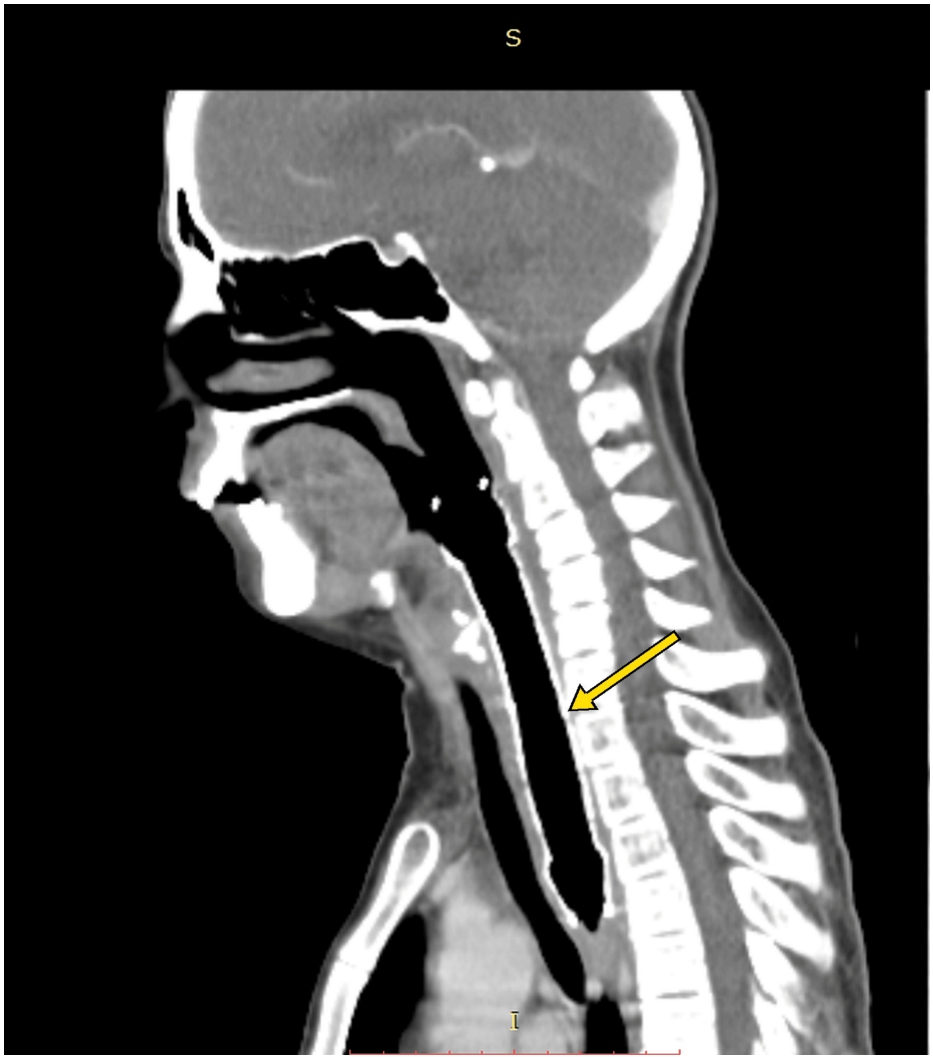



**FIGURE 5: CT performed 24 hours before the airway crisis**

Sagittal CT of the neck and chest performed on the day before the airway crisis, showing the stent in situ in the cervical oesophagus (arrow), no residual perforation, and a patent airway.

CT, computed tomography

On the evening of day 37 after stent insertion, she vomited, after which her breathlessness worsened acutely and new inspiratory stridor developed. On assessment the following day, she was alert, with a pulse of 88/min, blood pressure of 130/85 mmHg, and temperature of 36.2°C. Oxygen requirement escalated rapidly from 2 L/min; at one point, saturation could not be maintained despite 15 L/min, and saturation of 100% was subsequently achieved on 12 L/min. Examination revealed loud inspiratory stridor, reduced bilateral air entry with added sounds, and, in contrast to the immediate post-perforation period, no cervical crepitus.

Laboratory investigations are summarized in Table *1*. Liver enzymes and bilirubin were within normal limits.

| Parameter | Result | Reference range |
|---|---|---|
| Haemoglobin | 9.6 g/dL | 12.0-15.5 g/dL |
| White cell count | 6.69 × $10^9$/L | 4.0-11.0 × $10^9$/L |
| Platelets | 341 × $10^9$/L | 150-400 × $10^9$/L |
| Albumin | 2.85 g/dL | 3.5-5.0 g/dL |
| Total protein | 5.89 g/dL | 6.0-8.3 g/dL |
| C-reactive protein (serial) | 47 → 92 → 125 mg/L | <5 mg/L |
| Blood culture | Negative | Negative |
| Respiratory culture | Negative | Negative |

**TABLE 1: Laboratory investigations at presentation with airway obstruction**

She was escalated to intensive care with hypoxaemic respiratory failure and a threatened airway attributed to upward displacement of the oesophageal stent.

Given a previously irradiated neck, a known post-cricoid tumour bed, and an obstructing foreign body at the laryngeal inlet, the airway was categorised as difficult. Management was planned jointly by gastroenterology, anaesthesia, and head and neck surgery, with the head and neck team present and prepared for emergency surgical airway access.

Under general anaesthesia, fibreoptic laryngoscopy followed by direct laryngoscopy confirmed that the oesophageal stent had migrated proximally into the hypopharynx and was lying across and covering the laryngeal inlet (Figure *6*). The stent was compressed and withdrawn under direct vision, with no blood loss (Figure *7*).

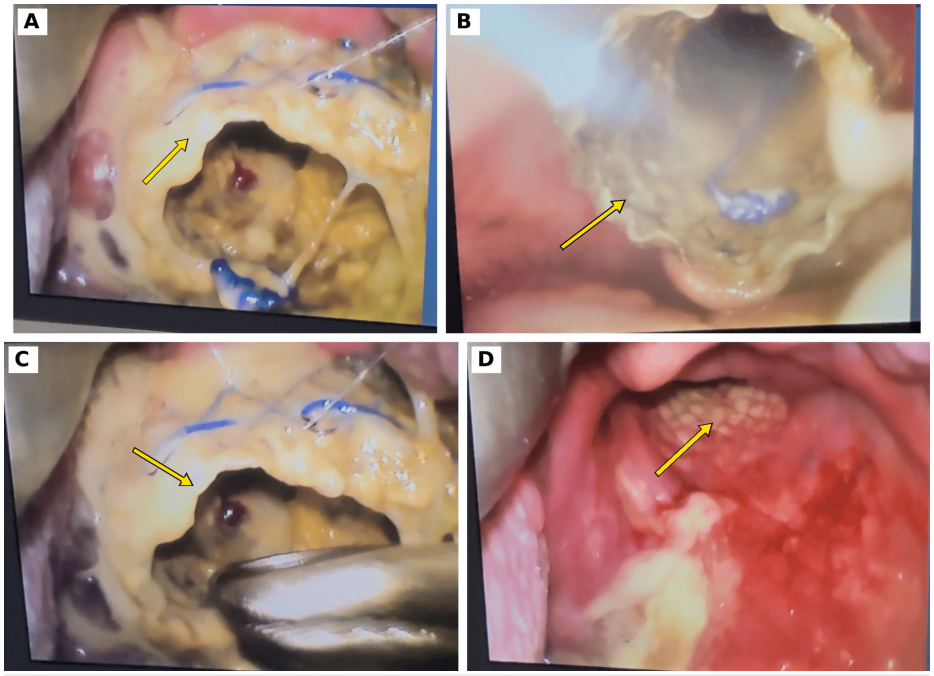



**FIGURE 6: Direct laryngoscopic views of the migrated stent at the laryngeal inlet**

(A) The proximally migrated oesophageal stent (arrow) lying within the hypopharynx and covering the laryngeal inlet. (B) Close-up view of the stent mesh (arrow) occluding the laryngeal inlet. (C) The stent (arrow) being grasped with Magill forceps under direct vision. (D) Oral view showing the stent mesh (arrow) visible in the oropharynx with surrounding inflamed mucosa.



**FIGURE 7: The retrieved stent**

The explanted 18 × 130 mm fully covered metallic oesophageal stent photographed immediately after retrieval.

The airway was then secured by elective endotracheal intubation by the anaesthesia team. The interval between stent insertion and the retrieval of the migrated stent was 38 days.

She remained intubated postoperatively and was managed in intensive care for three days, being successfully extubated on day 2 to supplemental oxygen. Chest radiography on day 40 showed a mild interval decrease in bilateral lower-zone patchy airspace opacities compared with the preceding day, with patent central airways and no pleural effusion or pneumothorax; the appearances were attributed to aspiration pneumonitis, which improved with supportive care and antibiotics (Figure *8*).

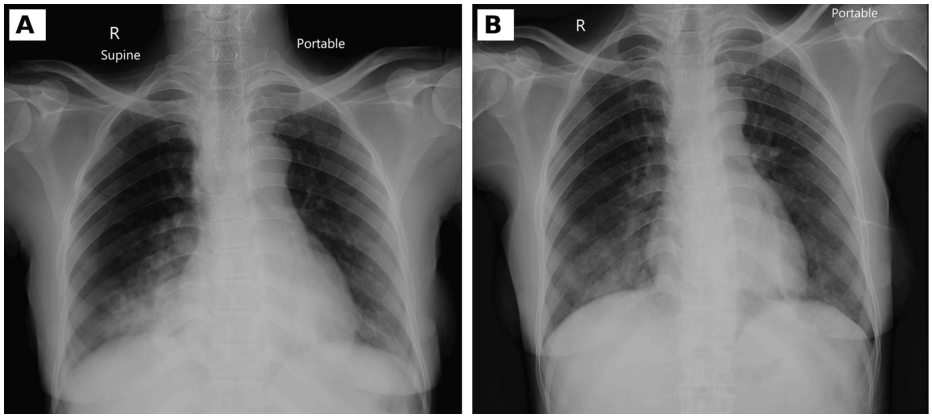



**FIGURE 8: Aspiration pneumonitis and recovery**

Paired portable chest radiographs from (A) day 1 and (B) day 3 after the procedure, showing bilateral lower-zone patchy airspace opacities with interval improvement, patent central airways, and no pneumothorax or effusion.

By day 42 after stent insertion, she reported that her breathing had improved and was mobilising out of bed. She was haemodynamically stable with oxygen saturation of 97% on 2 L/min via nasal cannula, GCS 15/15, a clinically clear chest, and only mild residual inspiratory stridor that had improved from the previous day. Nutrition continued via the PEG tube, and further management of the underlying radiation stricture was deferred pending recovery.

## Discussion

Stent migration is a common complication of covered oesophageal stents, as the covering that prevents tumour ingrowth also prevents the stent from embedding in the wall [1,2]. Migration is more common in stenting done for benign disease. Rates of 38%-44% have been reported in the literature for fully covered stents and for benign indications, respectively, compared with rates of 10%-16% for partially covered stents or malignant indications [2,3], because the oesophageal lumen widens as inflammation settles and the radial force that initially secured the stent reduces. Our patient had several of the recognised risk factors, including a benign (radiation-induced) stricture, a fully covered stent, and an indication (perforation) that required short-term coverage rather than anchorage [1,3,4].

Stricture of the proximal oesophagus after radiotherapy for head and neck carcinoma is a common complication, usually presenting within the first year (median six months in one series), in which nearly a quarter of patients had complete luminal obliteration [8]. Enteral feeding during radiotherapy and a mean dose higher than 45 Gy lead to a higher incidence of stricture formation in the upper oesophagus [9]. Notably, hypopharyngeal primaries and N2c nodal disease, both features of our patient, have been identified as high-risk configurations, with complete stenosis reported in 14% of such patients in one cohort [10]. Such strictures are difficult to treat; even with multiple oesophageal dilation procedures, less than half of patients are able to take diet orally or have their feeding gastrostomy tube removed [11].

What distinguishes this case is the direction and consequence of migration. The majority of reported migrations are distal, presenting with gastrointestinal symptoms including recurrent dysphagia, food impaction, gastric outlet obstruction, and occasionally distal bowel injury [3,4]. Airway complications associated with oesophageal stents are rare and usually occur indirectly due to external tracheobronchial compression [6]. Bilateral vocal cord paralysis has also been reported following proximal stent placement [7]. Only one case of acute airway obstruction was reported in a recent systematic review of acute complications following late oesophageal stent migration describing a range of clinical presentations [12].

That single directly comparable report, by Sloan et al., described a 72-year-old man with a cervical oesophageal stricture following treatment for tongue cancer, in whom a covered SEMS migrated proximally into the hypopharynx and obstructed the glottic opening, causing acute respiratory distress, hypoxia, and stridor; the stent was removed with Magill forceps under video laryngoscopy, with rapid resolution of symptoms [13]. Our case has several similarities, including a previously irradiated upper aerodigestive tract, a high cervical stricture, use of a covered stent, and a sudden progression from dysphagia to an acute airway emergency. However, our patient was younger and female, the stent was placed to seal an iatrogenic perforation rather than to treat stricture alone, and airway obstruction was severe enough to require intensive care and mechanical ventilation rather than resolving immediately on retrieval.

The proximal margin of the stent in this case was at 13 cm from the incisors, immediately below the level of the aryepiglottic folds. Stenting near the UES has a higher risk of globus sensation, aspiration, and fistula

formation [5], and only a few centimetres of proximal displacement are required for the stent to enter the hypopharynx.

The association between vomiting and stent migration is important but should be interpreted carefully. Retching can produce high pressure within the oesophagus and forceful proximal displacement of a stent that was already loosely positioned. However, it is also possible that the stent had already begun to migrate and that the vomiting occurred as a result of this migration.

The patient's repeated emergency department visits with cough during the six days before the acute respiratory event suggest that the stent displacement was gradual rather than sudden. This observation provides an important clinical lesson. In patients with a cervical oesophageal stent, new or worsening respiratory symptoms should raise suspicion of stent migration until proven otherwise. Clinicians should be particularly alert because delayed airway compromise has been reported even after uneventful stent placement [6,7].

The CT scan performed one day before the acute airway compromise showed the stent in place, no perforation, and a patent airway. However, within 24 hours, the stent migrated and obstructed the laryngeal inlet. A normal CT scan cannot rule out subsequent stent migration. When suspicion is high, bedside fibreoptic laryngoscopy must be done, as it allows direct airway assessment without moving a hypoxaemic patient for a CT scan.

In this case, direct laryngoscopy served both diagnostic and therapeutic purposes by confirming the diagnosis and enabling immediate stent removal with Magill forceps, followed by endotracheal intubation to secure the airway. Successful management depended on a multidisciplinary team, including anaesthesia, gastroenterology, and head and neck surgery, prepared to perform an emergency surgical airway if required.

The events leading to stenting also provide important lessons. The perforation occurred during oesophagoscopy for PEG removal across a radiation-induced cervical oesophageal stricture despite clear surveillance imaging. Once perforation occurred, stenting was a reasonable management option [1]. However, current guidelines favour clip or suture closure for small, contained cervical oesophageal defects and recognise that proximal oesophageal stents have a higher risk of migration [14]. When high cervical stenting is unavoidable, measures to reduce migration, including clip or suture fixation [15], appropriate stent sizing, early planned removal, and clear patient counselling regarding respiratory or voice changes, should be considered.

## Conclusions

Proximal migration of a fully covered oesophageal stent into the hypopharynx is a rare but potentially fatal complication that converts a benign nutritional problem into an acute airway emergency. It should be suspected in any patient with a high cervical oesophageal stent who develops cough, dyspnoea, stridor, voice change, or an escalating oxygen requirement, regardless of recent reassuring imaging. A safe rescue strategy includes early airway visualisation, immediate stent retrieval under sedation, and multidisciplinary airway support with head and neck surgical backup. For stents deployed near the UES, migration-prevention strategies and patient education regarding respiratory symptoms should be considered.

## Additional Information

### Author Contributions

All authors have reviewed the final version to be published and agreed to be accountable for all aspects of the work.

**Concept and design:** Muhammad Zeb, Sameen Tahir, Mohammad Moaviz Aslam, Raza Hussain

**Acquisition, analysis, or interpretation of data:** Muhammad Zeb, Sameen Tahir, Mohammad Moaviz Aslam, Raza Hussain

**Drafting of the manuscript:** Muhammad Zeb, Sameen Tahir, Mohammad Moaviz Aslam, Raza Hussain

**Critical review of the manuscript for important intellectual content:** Muhammad Zeb, Sameen Tahir, Mohammad Moaviz Aslam, Raza Hussain

**Supervision:** Muhammad Zeb, Sameen Tahir, Mohammad Moaviz Aslam, Raza Hussain

### Disclosures

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