

Rare and dangerous complication of nasogastric tube insertion

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DESCRIPTION

A 72-year-old woman presented to an academic teaching hospital with a 2-day history of dyspnoea following 2 months of worsening dysphonia and oropharyngeal dysphagia. On examination, she had stridor and expiratory wheeze. Medical history included marked kyphoscoliosis with limited neck extension as well as venous leg ulcers, osteoporosis, atrial fibrillation and anaemia. She was an ex-smoker, with 50 pack years. Due to respiratory instability, she was admitted to the intensive care unit and urgent referral made to the ear, nose and throat team. A fiberoptic nasendoscopy demonstrated bilateral abductor vocal cord palsy. A surgical tracheostomy was inserted, and due to concerns about the safety of her swallow, a decision was made to place a fine bore nasogastric (NG) feeding tube at the bedside. During NG insertion, there was a significant amount of resistance felt at 20 cm from the incisors. Despite this, NG tube placement was completed uneventfully. A CT of the neck and thorax was arranged to investigate the cause of the vocal cord palsy.

The CT neck and thorax showed gas within the oesophageal wall and tracking along the line of the oesophagus to the diaphragm. There was also gas within the mediastinum but no fluid collection. Due to concerns of an iatrogenic oesophageal perforation during NG insertion, an urgent referral to the oesophagogastric on call consultant was made. The patient did not show any signs of sepsis, or surgical emphysema. On ITU, an emergency oesophagogastroduodenoscopy was performed. At 20 cm from the incisors, a haematoma and a mucosal flap



Figure 1 An image captured during oesophagogastroduodenoscopy showing a haematoma and mucosal flap at 20 cm from the incisors.



Figure 2 An image captured during oesophagogastroduodenoscopy showing that the nasogastric tube was seen to tunnel under the mucosa down to the oesophagogastric junction.

(figure 1) were seen, below which, the NG tube was seen to tunnel under the mucosa down to the oesophagogastric junction (figure 2). On removing the tube, a mucosal defect was seen, but there was no obvious full thickness perforation. A decision was made to treat the patient for a potential full thickness perforation even though this was not evident endoscopically. Therefore, an endoluminal nasojejunal (NJ) feeding tube was inserted under direct vision for nutrition and a 14Fr NG tube was placed for drainage and secured. The patient was managed with nil by mouth, NJ feeding at a rate of 20 mL/hour, intravenous piperacillin tazobactam, fluconazole and omeprazole. The patient made an uneventful recovery from the iatrogenic injury and was managed on a neurological ward. Her underlying diagnosis was acute bulbar palsy variant of Guillain-Barré syndrome from which she made a slow but full recovery.

Submucosal tunnelling or intramural oesophageal dissection due to blind NG insertion is a very rare complication. We identified eight such cases in the literature,^{1–8} with a median patient age of 48 years (range 26–78 years) and a female-to-male ratio of 3:1. Symptoms of oesophageal dissection included sudden onset of chest pain, odynophagia, dysphagia and mild or no haematemesis. Management was usually conservative with recovery in most cases. However, more invasive treatment such as the application of clips endoscopically² or even total gastrectomy³ was reported. Overall, mortality



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was high at 25%, representing a rare and dangerous complication of a commonly performed procedure.

Risk factors for oesophageal perforation include underlying oesophageal disease (eg, oesophagitis, strictures, malignancy), cervical spine disease and advanced age, with recent midfacial trauma or surgery being an absolute contraindication to NG insertion.⁹ Of the few reported cases of oesophageal submucosal dissection, risk factors included: neurological disease (stroke,¹ brain tumour,³ Guillain-Barré (present case)), abnormal

gastrointestinal anatomy (gastric tumour,² oesophagitis,⁵ impacted food bolus⁶) intubated patients^{4 8} and patients with symptoms of dysphagia of any cause.^{1 3 6}

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Learning points

- ▶ Recognition of a high-risk patient is of vital importance in performing all bedside procedures including nasogastric (NG) tube placement. This patient was an elderly woman with neurological disease affecting her swallow and severe kyphoscoliosis and reduced neck mobility.
- ▶ A sensation of resistance should alert the clinician to non-luminal positioning. This is particularly important in the context of using a relatively stiff fine bore feeding tube which has a metallic guidewire. Blindly proceeding in the presence of resistance is not advisable.
- ▶ A low threshold needs to be applied for early imaging, including direct visualisation of the oesophagus if there are concerns of oesophageal trauma with NG insertion.
- ▶ Conservative management is suitable for patients who are stable with no signs of deterioration suggestive of perforation. However, in cases with evidence of sepsis or severe pain, endoscopic or surgical management may be considered.

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