Prolonged nasotracheal intubation in recurrent papillary thyroid carcinoma

Nik Fariza Husna NIK HASSAN 1, 2 and Irfan MOHAMAD 1
1 Department of Otorhinolaryngology-Head & Neck Surgery, School of Medical Sciences, Universiti Sains Malaysia Health Campus, Kelantan and 2 School of Health Sciences, Universiti Sains Malaysia, Kelantan, Malaysia

ABSTRACT
Endotracheal intubation is usually the preferred technique of securing a compromised airway. In prolonged intubation, a tracheostomy is usually created to avoid complications of prolonged ventilation. However, the condition of the patient or the disease itself sometimes does not permit this conversion. Therefore keeping the tube in situ for prolonged durations may be needed. We report the case of a 62-year-old Malay man with recurrent papillary carcinoma of thyroid involving the trachea that was managed with the use of nasotracheal intubation for stenting the airway.

Keywords: Airway, intubation, nose, trachea, stent

INTRODUCTION
Acute upper airway obstruction requires the airway to be secured urgently. This can be with conventional endotracheal intubation or a tracheostomy. Occasionally, both measures may be difficulty when there is a large neck mass, or cemented anterior neck region secondary to the disease or previous treatment. Prolonged awake nasotracheal intubation is an alternative measure to maintain the patency of the airway.

CASE REPORT
A 62-year-old Malay man presented with a two-day history of dyspnoea that had worsened on the day of presentation. Ten years previously, he had been treated for papillary thyroid carcinoma with total thyroidectomy and radio-iodine ablation. The current problem started three months ago when he started to experience dysphagia. There was no history of dysphonia or swelling of the neck.

Examination revealed that the patient was in respiratory distress and unable to speak in a complete sentence. A high flow mask was commenced. There were prominent inspiratory stridors, reduced bilateral air entry and paradoxical chest movement. He was also...
A full workup was carried out with the nasotracheal tube in situ. A fine needle aspiration for cytology (FNAC) through the hard cemented anterior neck showed thyroid carcinoma most probably papillary type. A computed tomography scan of the neck showed features consistent with a recurrent thyroid carcinoma with poor demarcation involving the major vessels, sternocleidomastoid muscles, oesophagus and prevertebral muscles. The tumour extended retrosternally to the carina and intraluminally from the subglottis to approximately 4cm above the carina. Lung and right adrenal metastases were also noted. The patient was started on palliative radiotherapy which was uneventful. However, the disease progressed and the patient succumbed after two months of nasotracheal intubation.

**DISCUSSION**

A thyroid lesion or mass may impose additional difficulty when a compromised airway needs to be secured. Externally visible large thyroid mass will make identification of the tracheal rings difficult. Furthermore, manipulations of the gland can lead to hormonal disturbance (thyroid storm) or bleeding. In a review of 2,489 thyroid cancer cases, 13...
presented with acute respiratory distress and eight required intraluminal tracheal obstruction. Therefore, intraluminal tracheal invasion is an ominous sign.  

1 Scarring and fibrosis from previous surgery will also contribute to the pathogenesis and difficulty in performing a tracheostomy. Apart from this, presence of the tumour can make tracheostomy difficult. Therefore, intubation may be preferred. However, awake intubation in a patient with acute respiratory distress is difficult. Furthermore, this is only a temporary measure.

Mori et al. reported a case of acute respiratory distress in a 61-year-old woman with severe tracheal stenosis secondary to thyroid malignancy which was managed with awake fibre optic intubation, that was later converted to a formal tracheostomy under general anaesthesia.  

2 The stenotic tracheal segment extended from 4.5cm to 8cm below the glottis; the smallest caliber being 5mm. Shaha had recommended fibreoptic intubation be performed in the operating room for patients with anaplastic thyroid carcinoma presenting with airway obstruction and suggested that tracheostomy or cricothyrotomy be considered as a later option.  

3 However, not all intubated cases can proceed to a formal tracheostomy as in our patient. Yamashita et al. reported prolonged nasotracheal intubation in a patient with a malignant thyroid that was compressing the trachea.  

4 The tube was left in situ for 174 days until completion of chemoradiotherapy with relief of compression. In our case, the nasotracheal tube was left in situ for 60 days which had also functioned as a tracheal stent until the patient succumbed to the disease. He had been ventilated for only one day. Tracheostomy was not attempted as the segment of tracheal involvement was very close to the carina. Prevertebral muscle involvements was also a factor that influenced us to palliate the patient.

As with conventional intubation, prolonged nasotracheal intubation is associated with risks. This includes sinusitis involving the maxillary and sphenoid.  

5 Bleeding is also another recognised complication.

In conclusion, for patients with neck mass resulting in difficulty with performing a tracheostomy, prolonged nasotracheal intubation should be considered as it is safe and allows treatment to proceed.

REFERENCES


