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Airway Management in a Patient with Huge Neck Mass
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Abstract
Airway management of a patient with huge neck swelling is always challenging for the anaesthetist. We describe successful management of a patient who presented in our ER with stridor as a result of massively enlarged thyroid gland. Various options are available for appropriate airway management in such cases which are discussed.

Introduction
Goiter as a risk factor for difficult airway, is not widely studied. A strategy needs to be developed in order to anticipate and manage patients with difficult airway. This includes identifying the potential problems, considering different options and selection of an appropriate plan in the particular scenario. We report a case of difficult intubation in which we use fibreoptic bronchoscope successfully to intubate the patient before tracheostomy.

Case Report
A 50 years old female came to operation room for emergency tracheostomy. She was a known case of obesity, hypertension and diabetes. She started developing a neck swelling around 12 years back which gradually increased in size. For last 2 to 3 days, patient's attendants noted an abrupt increase in size of swelling and change in voice. Later, she started having a choking sensation as well. On examination, she was drowsy and in severe respiratory distress with respiratory rate of 35 breaths per minute and oxygen saturation of 92 to 94% on 15 litres per minute oxygen via face mask. Chest auscultation revealed reduced bilateral breath sounds. Fibreoptic laryngoscopy showed hyperaemia of posterior pharyngeal wall, bulging obstructive airway, non visible vocal cords with overhanging epiglottis and severe supraglottic oedema. Anaesthesia was induced with sevoflurane and 100% oxygen and depth of anaesthesia increased while patient was breathing spontaneously. On direct laryngoscopy, glottic opening was not visualized. Intubating laryngeal mask airway was inserted and ventilation started. Fibreoptic intubation was tried through it but was not successful. It was difficult to maintain oxygenation with Intubating Laryngeal Mask Airway (ILMA), so it was pulled out. Then nasopharyngeal airway was inserted and fibreoptic bronchoscopy was done. Glottic opening was visualized with some difficulty. At that time, 2% Xylocaine 3cc was sprayed at vocal cords. Tip of fibreoptic bronchoscope was passed through vocal cord and tracheal rings identified and tip inserted up to carina. Smaller size 7 endotracheal tube was railrolled into trachea and tube position confirmed by end tidal carbon dioxide. Patient continued breathing spontaneously during the whole procedure. Anesthesia was maintained with isoflurane and fentanyl.[(f1)]

Routine tracheostomy was difficult to perform in this case because of the huge size of the swelling, so mediastinal approach for tracheostomy was used. Once mediastinal tracheostomy was completed, endotracheal tube was pulled out after end tidal carbon dioxide confirmation via tracheostomy tube of size 9 French. She was awakened at the end of procedure. She remained stable postoperatively. [(f2)]

Discussion
Airway assessment of patients with difficult airway includes history, physical examination and imaging studies although it has been reported that the ease of intubation was unrelated to the extent of abnormality seen on imaging studies of the neck. Patient should be kept spontaneously breathing whenever there is concern that the airway will be compromised on anaesthesia induction. The technique of inhalational induction for this has regained acceptability following
the introduction of sevoflurane.

Tracheostomy under local anaesthetic was an option considered in this case. A tracheostomy tray was open and ready in the event of any problem arising during fibreoptic intubation, but this could have been difficult because of her huge thyroid swelling over trachea and the indistinct anatomical landmarks. Retrograde intubation or introduction of a transtracheal cannula would also have been difficult for the same reasons. Other options would be blind nasal intubation in spontaneously breathing patient but with the risk of bleeding. As presence of blood in oropharynx can cause laryngospasm, hence fibreoptic bronchoscopy would have been difficult. The only viable option left was fibreoptic intubation, which the patient tolerated well.

References