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Case Report

Conventional right handed laryngoscope blade used as left handed blade: an experience with a case of mass in right side of oral cavity

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Abstract

Approach to management of anticipated difficult airway depends upon difficulty anticipated and availability of resources (expertise and instruments). Awake fibreoptic intubation is the preferred method to secure an anticipated difficult airway. However, availability of the instrument, expertise to use and patient cooperation should be considered. A conventional right handed laryngoscope blade can't be negotiated when the airway pathology involves part or whole of the right side, compressing the airway structures towards the left. In such cases, a left-handed laryngoscope blade helps to displace the tongue and the right-sided lesion to provide an unobstructed left sided view of the larynx. Here we describe a case of difficult airway with mass in right side of the neck region with tracheal deviation to left, for which right handed conventional laryngoscope blade could not be inserted due to extension of mass up to the right side of the tongue. On the second attempt, the usual right hand laryngoscope blade was held on right hand and inserted from the left side displacing the tongue to right side and bougie held in left hand was used to guide tracheal intubation.

Keywords: airway management; laryngoscopes; submandibular gland mass.

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Introduction

Difficult airway is the clinical situation in which a conventionally trained anesthesiologist experiences difficulty with face mask ventilation of the upper airway, difficulty with tracheal intubation, or both" defined by American Society of Anaesthesiologist (ASA).¹

The prevalence of difficult airway among Nepalese population appearing for surgery is around 4.5%.² Around 85% of all the mistakes concerning airway management result in irreversible cerebral damage³, and up to 28% of all anaesthesia related deaths can be attributed to the mismanagement of difficult airway.⁴ The difficult airway

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represents a complex interaction between patient factors, the clinical setting, and the skills of the practitioner.¹ Clinical history and anatomical abnormalities are the independent risk factor for the difficult airway. A combination of test predicts the difficult airway better than a single test.^{5,6} The gold standard for management of difficult airway is awake fiberoptic intubation¹ but the availability and expertise are the limitation, especially in the developing country.⁶ Generally, right handed curved Macintosh blade is used for airway management, where laryngoscope is held in left hand and inserted from right side of oral cavity to displace tongue to left side for a proper glottic view and trachea is intubated with endotracheal tube held in right hand. But there are cases where conventional laryngoscope cannot be used as mentioned below.

Case Report

Patient information

A 71 years old male, weighing 65kg, presented with chief complain of epigastric pain with multiple episode of vomiting for 3 days. He was diagnosed to have hollow viscus perforation peritonitis and was planned for exploratory laparotomy. Patient had swelling on right side of the neck (right submandibular region) since last 11years. There was no history of stridor or difficulty in breathing while in supine position.

Clinical findings

Airway examination revealed mouth opening of 4 cm, with multiple teeth missing, modified mallampati class III, Temporomandibular joint free, thyromental distance of 6.5cm, floor of the mouth raised with right side of tongue larger than the left, neck circumference of 91cm and the patient was adequately able to protrude the mandible. Neck examination showed diffused swelling in right lateral neck extending from submandibular gland above and upper chest below and approaching the midline (15cm X 15cm), consistency was soft, compressible, with bluish discoloration of overlying skin, no bruit was audible. (Figure 1) Trachea was shifted to left. Colour Doppler revealed venous malformation.



Figure 1. Diffuse swelling in right lateral neck (arrow)
Therapeutic interventions

Surgery was planned under general anesthesia with endotracheal intubation. Consent for an emergency tracheostomy was also obtained after explaining the risks involved in securing the airway. The difficult airway cart was kept ready as difficult airway was anticipated.

In the operating room, a peripheral intravenous access was established and routine monitors were attached. The patient was positioned supine in sniffing position and pre-oxygenated for 3 minutes. Modified rapid sequence induction and intubation was done with fentanyl 100mcg, pre-calculated dose of propofol 50mg and ketamine 50 mg then succinylcholine 100mg. Direct laryngoscopy using a size 4 right-hand Macintosh blade, revealed a grade IV laryngoscopic view. Laryngoscopy was repeated with size 4 right-hand Macintosh blade, introduced through left side of the oral cavity with the laryngoscope held in the right hand of the anaesthesiologist. With this maneuver it was possible to displace the tongue to the right side and grade III laryngoscopic view could be obtained. The trachea was successfully intubated with 7.5 internal diameter, cuffed endotracheal tube, which was rail-roaded over the gum-elastic bougie inserted using the left hand of the anaesthesiologist.

Discussion

Awake fiberoptic intubation is the recommended method of management of anticipated difficult airway.¹ However, availability of the instrument, expertise and patient cooperation are crucial.⁵ For uncooperative patient, the procedure can be performed under sedation by preserving the spontaneous. But there will be the risk of hypopnea and apnea. In our case, bronchoscope was not available and patient was too anxious to tolerate awake intubation.

When Nil per oral (NPO) can be ascertained, induction with titrated doses of short acting intravenous agents like propofol can effectively control both the speed and the depth of anaesthesia.⁸ Inhalational induction could also be the option but is irritant to the airway and induction is slower and may be associated with aspiration.⁸ However, like in our case, where NPO status can't be ascertained, administration of fast acting bolus dose of inducing agent and muscle relaxant for rapid sequence induction and intubation is preferred.⁸ With the use of short acting opioids like fentanyl and combination of inducing agents and short acting muscle relaxant, better haemodynamic profile can be achieved.⁹ We used fentanyl, precalculated dose of propofol and ketamine, and succinylcholine to secure the airway and the haemodynamic changes was not significant.

Conventionally, right handed laryngoscope blade is used for intubation of trachea. The laryngoscope is held in left hand and introduced to the oral cavity through the right side. The tongue is displaced to left side and trachea is intubated with endotracheal tube held in right hand.

But there are cases where right handed laryngoscope blade cannot be inserted form the right side of oral

cavity. Paraglossal straight blade can be used when the obstruction is central and not for lesions grossly involving either side of the airway.¹⁰ A left-handed laryngoscope blade can be used in the case where anatomy and shape of the blade displaces the tongue and the right sided lesion to obtain unobstructed left sided view of the vocal cord.⁷ Our case was ideal for the left handed laryngoscope blade. But due to unavailability, we used right hand laryngoscope blade, held with right hand, inserted from the left side and the tongue was displaced to right. A bougie guided intubation was performed successfully with the bougie held in left hand during the second attempt. The Cormack-Lehane grade III view could be attained.

To conclude, a conventional right hand laryngoscope blade can be held in right hand, introduced in the oral cavity from the left side to manage the airway in situation where laryngoscopy can't be performed through the right side.

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Conflict of interests: None

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