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

Abstract:

Approach to management of anticipated difficult airway depends upon difficulty anticipated and availability of resources (expertise and instruments). Awake fibreoptic intubation (AFOI) is the preferred method to secure an anticipated difficult airway. However, availability of the instrument, expertise to use and patient cooperation should be considered. When the airway pathology involves part or whole of the right side, compressing the airway structures towards the left, there is no room to position a usual curved or straight blade during laryngoscopy. A left-hand laryngoscope can be used in these cases where anatomy and contour of the blade helps to displace the tongue and the right-sided lesion, thereby providing 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 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 inserted from the left side and tongue was displaced to right side and bougie guided tracheal intubation was performed successfully.

Key words: difficult airway, left hand laryngoscope, right hand laryngoscope.

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 damage 3 and up to 28% of all anaesthesia related deaths can be attributed to the mismanagement of difficult airway. 4 The difficult airway represents a complex interaction between patient factors, the clinical setting, and the skills of the practitioner.1 The clinical history and anatomical abnormalities are the independent risk factor for the difficult airway. A combination of test will predict the difficult airway rather than a single test.6,7 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 like ours.7 Generally, right handed curved Macintosh blade is used for airway management. But in cases with mass in the right side of tongue, left handed laryngoscope can be used.8 Here we describe a case of venous malformation in the right side of the neck extending upto base of tongue with trachea deviated to left, posted for emergency laparotomy, in which right hand laryngoscopse could not be negotiated from the right side. Then same right hand laryngoscope was inserted from the left side and trachea was successfully intubated with the help of bougie.

Case:

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. Airway examination revealed mouth opening of 4 cm, with multiple teeth missing, modified mallampati class III, temperomandibular joint free, thyromental distance of 6.5cm, floor of the mouth raised with right side of tongue larger than the left, neck circumference was 91cm and was adequately able to protrude the mandible. Neck examination showed diffused swelling in right lateral neck extending upto submandibular gland above and upper chest below and approaching the midline (15cm X 15cm), consistency was soft, compressible, with bluish skin discolouration, no bruit was audible. (Fig. 1)Trachea was shifted to left. Colour Doppler revealed venous malformation. 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 minute. 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 this maneuver it was possible to displace the tongue to the right side and grade III laryngoscopic view could be attained. The trachea was successfully intubated with 7.5 ID, cuffed endotracheal tube with bougie guidance. The procedure was uneventful.

Discussion:

Awake fiberoptic intubation (AFOI) is the recommended method of management of anticipated difficult airway.1 However, availability of the instrument, expertise and patient cooperation are crucial.7 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 to effectively control both the speed and the depth of anaesthesia, is preferred.9 However, like in our case, where NPO status can’t be ascertained, administration of bolus dose during rapid sequence intubation might be associated with apnea. Inhalational induction could also be the option but is irritant to the airway and induction is slower. Once ventilation is assured, intubation can be attempted with the use of short acting neuromuscular blocking agents like succinylcholine.9 We used combination of fentanyl, ketamine, titrated dose of propofol and succinylcholine with the application of cricoid pressure.

Conventionally right handed laryngospe is used for the purpose of intubation. 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-hand scope can be used in the case where anatomy and contour of the blade manoeuvres the tongue and the right sided lesion, leaving an unobstructed left sided view of the glottis.8 Our case was ideal for the left hand laryngoscope. But due to unavailability, we used right hand laryngoscope inserting from the left side, displacing the tongue to right and bougie guided intubation was performed successfully during the second attempt. The Cormack –Lehane grade III view could be attained.

The use of a left-hand scope itself is not free of difficulties. Its use during difficult airway management requires prior practice of handling the scope. As a good technique of laryngoscopy depends on the prior experience of the anaesthesiologist, it may be reasonable to assume that left-hand blade may not be ideal in inexperienced hands.8

To conclude, a conventional right hand laryngoscope may be inserted from the left side of the oral cavity to manage the airway in situation where laryngoscopy can’t be performed through the right side. However, AFOI or left hand laryngoscope is the ideal in the case we described, provided there is no limitation of expertise and instruments.

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Fig. 1. Diffuse swelling in right lateral neck