Video laryngoscope: A boon for airway management in severe facial trauma

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ABSTRACT

We report the use of video laryngoscope for the exchange of orotracheal tube to nasotracheal tube needed for mandibular repair in a case of oromaxillofacial injury.

Key words: Endotracheal tube exchanger, facial trauma, nasal intubation, video laryngoscope

Patients with oromaxillofacial injury have difficult airway due to distorted airway anatomy, associated cervical injury, and presence of blood in oral cavity. We report the use of video laryngoscope for exchanging an oral to a nasal endotracheal tube for mandibular fixation in a patient with orofaciomaxillary trauma.

CASE REPORT

A 26-year-old male presented to us following severe facial trauma [Figure 1]. In view of facial injury and threatened airway, his trachea was orally intubated with a tracheal tube in the emergency department after five attempts using a conventional laryngoscope without using stylet or external laryngeal manipulation. Further evaluation showed mandibular fracture (body fracture on the right side and parasympysis fracture on the left side) and dentoalveolar fracture in maxilla in respect to right incisor tooth, with extruded right incisor tooth. An intermaxillary fixation followed by open reduction and rigid fixation of mandible was planned.

The surgical procedure required nasotracheal intubation and the patient attendants refused for an elective tracheostomy. All preparations for difficult airway management were done. We gently inserted a video laryngoscope maintaining a constant vision of internal airway anatomy, a 7.5 mm nasal endotracheal tube was then inserted through right nare until larynx. The oral endotracheal tube was removed over a tube exchanger under direct vision leaving the tube exchanger in situ. The nasal tube was negotiated into the larynx under direct vision using a Magill’s forceps. Correct placement of the tracheal tube was confirmed, and then tube exchanger was removed. Rest of the surgery remains uneventful.

DISCUSSION

Distorted airway anatomy and blood inside oral cavity were the primary airway management problem in our case. Another problem in our case was to ensure maintenance...
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of continuous ventilation and oxygenation during tube exchange. Fiberoptic bronchoscope is often used during difficult airway management situations.\(^1-3\) Patteson et al.\(^4\) described the use of fiberoptic bronchoscope for tube exchange wherein, the nasal tube through fiberoptic bronchoscope was placed between the existing oral tube and trachea and they could maintain oxygenation and ventilation of patient throughout the procedure. However, the problem with that approach was inability to exchange the tube if the airway were not of sufficient diameter to accommodate two endotracheal tubes. Fiberoptic bronchoscopy is a time-consuming highly operator-dependent procedure. It is usually not possible in cases of blood inside oral cavity and ensuring minimal interruption in oxygenation and ventilation is usually not possible during tube exchange using fiberoptic bronchoscopy. Hence, we did not use fiberoptic bronchoscope for tube exchange.

Use of video laryngoscope for tracheal intubation in case of faciomaxillary trauma has been described.\(^5\) Video laryngoscopy helps improve glottic visualization with less force application to the base of the tongue, and therefore, is less likely to induce local tissue injury, a feature highly desirable in our patient considering the extent of initial injury [Figure 1]. Hence, we used video laryngoscope (to have a constant vision of internal anatomy of oral cavity without inflicting more trauma to oral cavity) and tube exchanger for tube exchange providing continuous oxygenation and ventilation.

Securing the airway is one of the most important steps in the management of patients with orofaciomaxillary trauma, and we suggest the use of video laryngoscope for tracheal tube exchange these patients.

Declaration of patient consent
The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Financial support and sponsorship
Nil.

Conflicts of interest
There are no conflicts of interest.

REFERENCES

1. Watson CB, Prough DS, Balestieri FJ. Bronchoscope tube change in critically ill patients. Crit care Med 1980;8:246.
2. Rosenbaum SH, Rosenbaum LM, Cole RP, Askanazi J, Hyman AI. Use of the flexible fiberoptic bronchoscope to change endotracheal tubes in critically ill patients. Anesthesiology 1981;54:169-70.
3. Watson CB. Use of fiberoptic bronchoscope to change endotracheal tube endorsed. Anesthesiology 1981;55:476-7.
4. Patteson SK, Epps JL, Hall J. Simultaneous oral and nasal tracheal intubation utilizing a fiberoptic scope in a patient with facial trauma. J Clin Anesth 1996;8:258-9.
5. Cavus E, Callies A, Doerges V, Heller G, Merz S, Rösch P, et al. The C-MAC videolaryngoscope for prehospital emergency intubation: A prospective, multicentre, observational study. Emerg Med J 2011;28:650-3.