Anesthetic management of difficult airway in a patient with massive neurofibroma of face: Utility of Rendell Baker Soucek mask and left molar approach for ventilation and intubation

Dear Editor,

Mask ventilation is an essential skill in airway management, and loss of control of mask ventilation can create a situation from can ventilate, can’t intubate to a situation of can’t ventilate, can’t intubate. We wish to describe the utility of Rendell Baker Soucek mask and left molar approach for mask ventilation and tracheal intubation in a patient of massive neurofibroma of face scheduled for debulking of the mass.

A 45 kg, 28-year-old woman was scheduled for debulking of a neurofibroma occupying almost the entire right half of the face. This lesion, involving right nasal alae and right eyelid, was present since 20 years, was painless, and had progressed to size. The patient could not see with her right eye. There was no other positive medical history. Her cardiovascular and respiratory systems were unremarkable. She had no upper incisors, and movements of neck and temporo-mandibular joints were normal. The lesion was involving the upper lip on the right side and covering half of the oral opening. Nasal passage on the right side was compressed by the lesion; however, left nostril was patent. It was impossible to visualize oropharyngeal structures for Mallampati airway grading as only the left half of the mouth could be opened. Chest X-ray showed thoracic scoliosis. X-rays of the cervical spine and soft tissue neck were both normal. Computed tomography scan of head/brain and echocardiography were normal limits. Relevant investigations were within normal limits.

General anesthesia was planned for the procedure. As our patient was not convinced for awake intubation, we decided to intubate the patient under anesthesia. Difficult airway cart including fiberscope was kept ready. Patient was pre-oxygenated. We could not achieve adequate seal over nose and mouth with anatomical facemask, so we decided to use a Rendell Baker Soucek mask for ventilation kept over nose only for adequate seal to be achieved. Anesthesia was induced with 8% sevoflurane in oxygen delivered via a Rendell Baker Soucek mask kept over patient’s nose with the lips pursed, and adequate seal was achieved. When adequate depth of
anesthesia had been achieved, ability to mask ventilate was judged using assisted ventilation, and propofol 30 mg with fentanyl 50 mcg were given intravenously. Laryngoscopy was topically anesthetized with 2 puffs of 10% lignocaine spray. Laryngoscopy with left molar approach was done using Macintosh blade #3 and after visualizing the glottis, the trachea successfully intubated with a 7 mm ID endotracheal tube. The peri-operative period was uneventful.

Our backup plan was maintaining anesthesia using inhalational agents with the help of nasopharyngeal airway through left nostril and intubating the trachea using left molar approach of laryngoscopy. Another plan was maintaining anesthesia using inhalational agents with the help of pediatric size endotracheal tube through right nostril after nasal decongestion and lubrication of the passage and intubating the trachea using fiberscope through other nostril. If this would not have been possible, we would have awakened the patient and counseled her to accept awake intubation later.

Rendell Baker Soucek mask is used in pediatric patients because of good seal around contours of cheek and chin. The use of the mask for ventilation through mouth only, in a patient with nasal tumor, has been described. The design of the mask can affect the effectiveness of ventilation. Transparent disposable masks with cushion rims are most commonly used in anesthesia today. It is crucial to obtain a tight seal with the mask to prevent leaks. Leaks may result from an improperly-inflated cushion, improper mask size, presence of beard or abnormal facial anatomy. In this case, abnormal facial anatomy was responsible for ineffective ventilation with facemask. The ability to achieve adequate mask ventilation should always thus be assessed pre-operatively. In patients with expected difficult mask ventilation, the safest approach is to plan for an awake intubation. Flexible fiberoptic laryngoscopy is an effective tool for managing a difficult airway.

Left molar approach of laryngoscopy has been advocated in cases of difficult intubation, which is an unconventional technique, in which the blade is inserted from the left corner of the mouth. This approach has been shown to provide a better view of the glottis than the conventional midline approach in cases of difficult intubation. We used this approach because only the left half of the mouth could be opened. Difficulties of left molar approach are requirement of a stylet and less availability of space. Despite improved laryngeal view, negotiation of tube may be difficult.

The use of the laryngeal mask airway and other supraglottic devices like combitube, laryngeal tube should be encouraged when facemask ventilation is difficult. These options were not possible in our case as only the left half of the mouth could be opened. Trans-tracheal jet ventilation may be considered when supraglottic ventilation devices fail, but the operator must be familiar with its use. If all other measures fail to establish ventilation, cricothyrotomy or tracheostomy may be life-saving.

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