Successful airway management with left-molar laryngoscopy in glossopalatal ankylosis: A case report

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INTRODUCTION

Glossopalatal ankylosis and other forms of congenital oral synechiae can pose a challenge regarding airway management especially when associated craniofacial anomalies are present. We describe the anesthetic management of a midline glossopalatal ankylosis posted for release of the synechiae.

CASE REPORT

A 10 month old boy weighing 7.8 kilograms with glossopalatal ankylosis was posted for release of the ankylosis. The child had a constellation of anomalies which included glossopalatal ankylosis more towards the right side of the palate, mild hypoplasia of left maxilla, mandibular hypoplasia (Fig. 1), cleft palate posterior to adhesion, and ectrodactyly in all the limbs. Awakening the child in case of failed intubation was planned prior to induction since the release of synechiae for securing the airway might place the child at risk of aspirating blood. Anesthesia was induced with sevoflurane with 100% oxygen and adequate depth of anesthesia was obtained by Mapelson D circuit while maintaining spontaneous respiration. There was difficulty in finding venous access due to the presence of limb anomalies and the associated paucity of good peripheral veins. Since the space between the synechiae and cheek was larger on the left side, we proceeded with left molar approach for laryngoscopy with a curved Macintosh blade which allowed visualisation of the glottis with a Modified Cormack-Lehane grade of 2b at the first attempt. The tip of the blade was directed posteriorly along the groove between the tongue and the tonsil until the epiglottis and glottis came into sight. The intubation was performed at second attempt along the flange of the blade while the tongue bulge on the right side of the route of endotracheal tube was minimal to hamper the advancement due to the presence of synechiae. Atracurium in a dose of 0.5 mg/ Kg was administered following the passage of a 4 mm I D uncuffed standard endotracheal tube with stylet and the subsequent surgical release of ankylosis and primary closure of palatal defect proceeded uneventfully and lasted forty minutes (Fig. 2). The patient was reversed for neuromuscular blockade after surgery and extubation was done once the patient was fully awake. Post-operative period was uneventful.

DISCUSSION

Our case shows the usefulness of molar approach to laryngoscopy in pediatric difficult
Airway situations. Anteriorly occurring synechiae of the alveoli and palate are thought to occur due to genetic, teratogenic or mechanical insult during the early developmental period of the fetus, presenting as an isolated anomaly or as a part of syndrome. Insults resulting in close, quiescent contact between oral structures during the development may predispose to the formation of synechiae which is further supported by a close association of neuromuscular development anomalies of the orofacial structures including a high incidence of facial nerve paralysis (63%) (1). An increased incidence of limb abnormalities (88%), microglossia (63%), micrognathia (50%) and cleft palate (38%) is common as seen in our case. Severe synkathism and glosso-palatal ankylosis can lead to secondary fibrous temporomandibular joint ankylosis (13%) thus necessitating early repair in these cases (1).

Anesthesiologists may encounter congenital oral synechiae soon after delivery with upper airway obstruction or the patients may present for corrective surgery at a later date as seen in our case. The challenges while managing airway may arise during mask ventilation due to anomalies in the orofacial structures, a difficulty in passing the laryngoscopy blade or a difficulty in visualisation of glottis and intubation. Left-molar approach using a standard Macintosh blade improves the laryngoscopic view in patients with difficult midline laryngoscopy (2, 3). It has the advantage of utilizing the maximum effect of molar approach because the laryngoscope blade could be brought fully to the left side of the mouth, with rest of the oral opening available for viewing the larynx (3). However, the presence of the whole bulk of tongue in view may make the intubation more difficult as seen in our case.

The unavailability of suitably sized fiberoptic bronchoscope and the unreliability of blind nasal intubation especially in abnormal anatomical situations necessitate the anesthesiologist to be familiar with different approaches to laryngoscopy. Molar approach reduces the distance from the patient’s teeth to the larynx and prevents intrusion of maxillary structures into the line of view and hence it is advisable in difficult airway situations (3). Apart from difficult airway in adults, it can also be useful in paediatric population in situations where conventional laryngoscopy cannot be performed as seen in our case. Molar approach to laryngoscopy from the side where maximum space is available for the blade to pass inside the oral cavity might increase the chances of visualization of glottis as seen in our case.

Application of optimal external laryngeal manipulation (OELM) could have enhanced the laryngoscopic view by one to two grades (4) but was not tried in our case. Patients with glosso-palatal ankylosis may have associated limb deformities which might pose a problem in securing venous access.

In conclusion, anesthesiologists should be familiar with different approaches to laryngoscopy which may also be useful in difficult airway situations with abnormal anatomy.

References