Successful airway management in patient with Goldenhar’s syndrome using Truview PCD® laryngoscope

Sir—Hemifacial microsomnia is first and second branchial arch syndrome characterized by unilateral underdevelopment of ear, jaw, and check on the same side of the face. The other name of this anomaly is Goldenhar’s syndrome (1). In such patients, airway management remains a challenge even in expert hands (2). Various airway aids such as lightwand (3), suspension laryngoscopy (4), or fiberoptic intubation through a laryngeal mask (5) have proved successful in these patients. Airway management dilemma is likely to arise when these aids are either not available or expertise is lacking in newborns. We recently encountered a newborn with gross hemifacial anomaly leading to failed positive pressure mask ventilation and tracheal intubation using conventional curved and straight blade rigid laryngoscope. A modified mask ventilation technique and Truview PCD® laryngoscopy (Truphatek International Limited, Netanya, Israel) proved successful airway management strategies in this patient.

An 8-day-old premature male neonate with congenital hydrocephalus, gross hemifacial defect with proneness to apneic spells, and cyanosis was posted for ventriculoperitoneal shunt. On examination, patient had a very...
rudimentary right maxilla, highly malformed right eye, and ear with a large palatal cleft. Chin of the patient was also small and receding (Figure 1). In addition, patient had a left-sided palatoglossal arch stretching far toward the midline (Figure S1) leaving less space for safe airway instrumentation.

After 4 h of nil per oral status, patient was gradually induced with sevoflurane in oxygen. When the time came for assisted breathing, it was realized that there was significant leak around right-sided facial defect (Figure S2). Applying a gauge pack covered with tegaderm® (Figure S3) solved positive pressure ventilation problem. Because we did not have a fiberscope that would allow premounting of 3.0-mm endotracheal tube (ETT) nor the expertise to perform lightwand intubation in premature neonate, it was decided to adopt conventional laryngoscopy. An anesthetist with over 15 years of experience attempted straight and curved blade rigid laryngoscopy after achieving satisfactory depth of anesthesia. Despite best efforts, a structure that appeared to be the tip of epiglottis could be visualized, but ETT could not be negotiated into glottis despite using laryngeal manipulation and an appropriately shaped styleted 3.0-mm ID ETT. During these attempts, patient’s heart rate and oxygen saturation dropped to 102/min and 95% from an initial level of 136/min and 99%, respectively. Realizing the deterioration in patient’s hemodynamic parameters with two such efforts, it was thought appropriate to abandon conventional laryngoscopy and make one final attempt at tracheal intubation using Truview PCD® 0 size laryngoscope blade. With some manipulation of external laryngeal structures by the endoscopist, lower half of the laryngeal inlet could be visualized (Figure S4) and ETT negotiated into the trachea (Figure S5). During 35 s of Truview PCD® laryngoscopy period, patient received 2l/min of oxygen via the oxygenation port of the laryngoscope. Heart rate increased to 148/min, but saturation remained on 98%. Subsequent course of anesthesia and recovery was uneventful.

From the anesthesiologist’s perspective, our patient with gross hemifacial deformity posed several difficulties at mask ventilation and conventional tracheal intubation which we overcame successfully. First, rudimentary right cheek prevented effective mask seal which we could overcome by using gauge and tegaderm®. Second, patient was noted to go into apneic spells and rapid desaturation. The use of pediatric Truview PCD® with dedicated oxygenation port proved ideal in this patient. Third, the overriding palatoglossal arch on the left side provided less than usual space for laryngoscopy. Using 0 size blade of the Truview PCD Truview PCD® with just 11 mm width offered a better margin of safety against trauma to soft structures. Fourth, failure to achieve optimal glottic view with the conventional straight and curved blade due to anteriorly placed larynx was remarkably overcome by using Truview PCD® because of its 47° anterior angulation of the distal portion of the blade.

Finally, the question arises if we had Truview PCD why was it not used as the first choice of laryngoscopy. This was based on our experience and those of others that indirect videolaryngoscopes with their enhanced angulation of blade favor easier visualization of glottis but may pose difficulty or even failure to introduce ETT into the glottis (6). Keeping this in mind and a far richer experience with conventional pediatric laryngoscopes, we did not initiate laryngoscopy with Truview PCD®.

In conclusion, Truview PCD®-aided laryngoscopy and tracheal intubation may be yet another safe alternative to tracheal intubation in the patients of Goldenhar’s syndrome.

Disclosures/conflict of interest
No conflicts of interest declared.

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Supporting information
Additional Supporting Information may be found in the online version of this article:
Figure S1 Arrow showing overriding left side palatoglossal arch.
Figure S2 Poorly fitting Rendel Baker face mask.
Figure S3 Circular silicon facemask applied over gauge covered facial defect.
Figure S4 Partial glottic view with the Truview PCD laryngoscope aide by laryngeal manipulation.
Figure S5 Stylet removal following correct ETT placement.

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References