

Channeled videolaryngoscope assisted fiberoptic intubation in a Peter plus syndrome with difficult Pediatric Airway

Dear Editor,

Pediatric difficult airway can be grouped as, difficult mask ventilation, difficult laryngoscopy/intubation, cannot intubate and cannot ventilate situation. Incidence of difficult laryngoscopy and difficult intubation, varies between 0.06% and 3%^[1] and 0.03 to 0.13%^[2] respectively. We describe an anticipated difficult airway in an infant with 'Peter Plus Syndrome.' This rare autosomal recessive genetic syndrome

is characterized by eye involvement, cleft palate and lip, developmental delay, short stature and conductive deafness.^[3]

A, nine, month old infant weighing 6 kg, presented with incomplete cleft palate for surgery. Preoperative investigations were normal. Examination revealed micrognathia with retruded mandible, low set ears, syndactyly, other systemic examination were normal [Figure 1a]. Parents were counselled and the consent was obtained. Preoperative instructions included, securing of the intravenous line and fasting orders. The plan was General anesthesia (GA) and orotracheal intubation with videolaryngoscope. The operation theater (OT) was prepared with the difficult airway cart which included indirect videolaryngoscope (AirtraqTM), Flexible fiberoptic bronchoscope (FOB) [PentaxTM FI-9RBS, New Jersey USA], Ambu® AuragainTM a

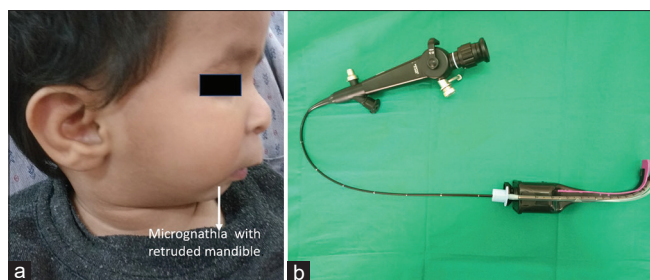


Figure 1: (a) Shows the profile of the child with micrognathia and retruded mandible in a case of “Peter Plus Syndrome”. (b) Shows the assembly of Airtraq™ videolaryngoscope with FOB rail roaded with the ETT used in the case for intubation

supraglottic device (SGD), pediatric stylets and ventilating bougie. On arrival in OT, standard monitoring ensued and intravenous ketamine 10 mg, fentanyl 10 µg were administered. Adequacy of the mask ventilation was checked and spontaneous breathing was maintained under sevoflurane (2-4%) with 100% oxygen.

Videolaryngoscopy revealed anteriorly placed larynx with Cormack Lehane (CL) view II b. Attempt to negotiate glottis failed with a flexometallic, (4.0 mm ID) uncuffed, endotracheal tube (ETT), when rail loaded over pediatric ventilating bougie (Cooks Medical), and advanced through the channeled videolaryngoscope. Plan was changed to SGD guided fiberoptic intubation. Auragain™ (1.5 size) was inserted but there was a considerable leak, the SGD was removed and the child was mask ventilated with 100% oxygen and depth of anesthesia was maintained with sevoflurane (2–4%) and additional 2 mg IV ketamine was administered. A second attempt of videolaryngoscopy was performed and after reaching epiglottis, it was stabilized in this position and then, the FOB loaded with 4.0 mm ID ETT, was gently passed through the channel of the videolaryngoscope by another trained anesthesiologist [Figure 1b]. After reaching the summit of the glottis, the tip was manipulated anteriorly, and the CL view changed to II a. Following the spray of local anesthesia (1ml of 2% lignocaine), FOB assisted intubation was done, which was confirmed, both with capnography and by, bilateral air entry in the chest. The tube was fixed in the midline and depth of anesthesia was increased. On no occasion the oxygen saturation went below 92%. The surgery was uneventful and the child was extubated completely awake.

Pediatric difficult intubation registry highlighted four risk factors increasing the airway complications; more than two attempts to intubate, weight below 10 kg, micrognathia and delayed attempt of indirect laryngoscopy.^[1,4] Attempts were limited to two in our patient with the judicious use of

videolaryngoscope. FOB, is fraught with challenges when used orally due to the difficulty in keeping it midline and the increased angle between the laryngeal inlet and oral cavity which gets exaggerated in infants with micrognathia. This was overcome by the combined use of videolaryngoscope where the channel was used as a conduit for passing the FOB smoothly till the laryngeal inlet as also being done by Liew et al. in an immobile cervical spine patient.^[5]

Combined use of channeled videolaryngoscope with pediatric FOB guided intubation provides an alternative option for managing difficult to intubate pediatric cases with micrognathia and anteriorly displaced larynx.

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.

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Conflicts of interest

There are no conflicts of interest.

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