
Use of Airtraq® optical laryngoscope for the intubation in Pierre Robin sequence in a teenage child

Sir,

We report a case of a 14-year-old girl with Pierre Robin

sequence (PRS) with micrognathia, glossoptosis and high-arched palate for the dental treatment at our hospital. She was a case of isolated PRS without any other associated anomalies or syndromes. She weighed 30 kg and was having mild mental retardation. Her mouth opening was more than 2.5 cm, with Mallampati airway Grade 3 [Figure 1] and high-arched palate. She had very small receding mandible [Figure 1] and thyromental distance was <1.5 cm. Rest of the airway

assessment as well as laboratory reports were normal. She was not co-operating for dental treatment under local anaesthesia. The duration of the procedure was close to 1 h requiring general anaesthesia with oral intubation.

Equipment for direct laryngoscopy, size 2, 3 and 4 of Airtraq® optical laryngoscope and ultra-thin flexible fibreoptic bronchoscope (2.0 mm size) were kept ready. Intravenous line was secured in the ward and no sedation was administered.

Inside the operation theatre, she was administered glycopyrrolate 0.2 mg plus midazolam 1 mg. As she became agitated, 30 mg propofol was given to induce sleep. Standard monitoring (electrocardiogram, non-invasive blood pressure, SpO₂, respiration rate and EtCO₂) was applied, and she was induced with sevoflurane with 100% oxygen. After achieving adequate depth of anaesthesia, mask ventilation was tried. Effective mask ventilation was verified by the presence of adequate chest rise and presence of end-tidal CO₂ trace. She was given succinylcholine (60 mg) to achieve relaxation for endotracheal intubation. Effective mask ventilation with oxygen (6 L) and sevoflurane 3% was continued for 60s after succinylcholine injection. Direct laryngoscopy was tried, which showed Cormack–Lehane Grade 3 laryngoscopy view. Mask ventilation was restarted and Airtraq® laryngoscope size 3 with preloaded endotracheal tube size 5 with cuff was introduced [Figure 2]. Vision under Airtraq® optical laryngoscope was Cormack–Lehane Grade 1 and intubation was achieved successfully on the first attempt.

Intubation and/or ventilation can be difficult in children with PRS.^[1] Various modalities of management can be used successfully depending on expertise and availability of equipment.^[2] Though direct

laryngoscopy can be successfully applied, flexible fibreoptic intubation can be a method of choice if direct laryngoscopy fails.^[3] Alexander reported as high as 63% failure rate of direct laryngoscopy, requiring flexible fibreoptic intubation.^[3] Though this was reported mainly in neonatal population, intubation can still be difficult in older children as patient characteristics, not the age, decide the difficulties.^[4]

Intubation with flexible fibreoptic bronchoscope under sedation is a difficult skill to acquire, especially in the paediatric population. It requires special paediatric flexible fibreoptic bronchoscope, which is not available in every anaesthesia department. Intubation of paediatric patients with adult fibreoptic bronchoscope requires special understanding and experience. Intubation of a paediatric patient with adult flexible fibreoptic bronchoscope has higher chances of failure.

With the development of video laryngoscopy, many intubations, earlier considered difficult, can be done successfully even in the paediatric population.^[5] Airtraq® is one of the very few video laryngoscopy devices available for the paediatric population. It is a disposable, cheap and easily available device. Airtraq® is an optical video laryngoscope with indirect vision, removing the necessities of aligning various angles required for direct laryngoscopy which improves Cormack–Lehane view when compared with conventional laryngoscope as evident in our patient also. As force or traction on the upper jaw is needed, it helps in management of the patients having large lip and palate defects. Dedicated channel for endotracheal tube in Airtraq® allows preloading of endotracheal tube which reduces the intubation time. Intubation time with Airtraq® is almost comparable to direct laryngoscopy. This is especially valuable



Figure 1: Anatomical features



Figure 2: Intubation with Airtraq®

in paediatric population where de-saturation occurs earlier. With fibreoptic bronchoscope-guided intubation not accessible, Airtraq® video laryngoscope can be an effective alternative in difficult airway cases such as PRS. Airtraq® use has been reported in few cases of PRS.^[6] Though it requires validation from randomised controlled studies, Airtraq® laryngoscopy and intubation can be considered the first line of management in cases of PRS.

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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