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LETTER TO THE EDITOR

Airtraq optical laryngoscope: initial clinical experience in 20 children

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To the Editor:

Compared with the conventional direct laryngoscope, the Airtraq optical laryngoscope (AOL, Prodol, Vizcaya, Spain) has the advantage of providing a non-line-of-sight view of the airway and visual control of tracheal tube advancement [1, 2]. This new single-use laryngoscope includes a conduit for placement and guidance of the endotracheal tube. Using this conduit, the operator can direct the tracheal tube into the glottic opening without using a tube stylet. Both infant and pediatric AOLs recently became available for clinical practice, in addition to the adult-sized one. The infant AOL accepts tracheal tube with an internal diameter (ID) between 2.5 and 3.5 mm; whereas the pediatric one accepts a larger tube (ID 3.5–5.5 mm). We used these AOLs in 20 young children presenting for elective surgery. The use of AOL in children was approved by the Human Ethics Committee of Jichi Medical University, and all parents provided informed consent. Their age and weight are listed in Table 1. Eleven anesthesia residents performed tracheal intubation using the AOL equipped with an external monitor display. During laryngoscopy, the staff anesthesiologists watched the monitor display and supervised the procedure of tracheal intubation. Correct placement of the tracheal tube was confirmed by the appearance of the end-tidal CO_2 trace on the monitor screen. The time to secure the airway was defined as the time from interruption of intermittent positive pressure ventilation to connection of the tracheal tube to an anesthesia circle. Endotracheal intubation using the AOL was successful in all 20 children. Case 5 was a patient with Treacher Collins syndrome, in whom the Macintosh laryngoscopy revealed only the tip of the epiglottis, whereas the pediatric AOL easily captured the glottic opening, resulting in successful intubation. Details of this particular case have been reported elsewhere [3]. With regard to Case 9, the tip of the tracheal tube could not be introduced into the trachea on the first attempt, because the glottic opening could not be centered in the view of the AOL. A malleable stylet (6F Satin Slip Stylet; Mallinckrodt, Athlone, Eire) facilitated introduction of the tube tip into the tracheal inlet on the second attempt, resulting in successful intubation. Case 12 required two maneuvers to align the tube tip with glottic opening. Case 19 had a large cleft lip and palate and the Macintosh laryngoscope failed to expose the glottis. Endotracheal intubation was performed by the infant AOL after two failed attempts.

Increasing evidence indicates that the AOL is useful for airway management of normal and difficult airways in adults [1, 2]. Based on our experience in adults [4], we expected ease of use of the AOL in infants and young children. To our knowledge, only a few case reports have been published to date on tracheal intubation using the AOL in children [5]. The AOL has an oropharyngeal airway-shaped blade and this feature of the blade is likely to provide advantages in glottic exposure, even in children with high and anterior-positioned glottis. Both the close proximity view of the glottis and the guide channel for tracheal tube placement also simplify airway management. The magnified and unobstructed view of the glottis is significantly better than with the direct laryngoscopic view and helps the examiner recognize the anatomical structures and the advancing tip of the tracheal tube in the trachea. The AOL seems a safe and beneficial device for tracheal intubation in young children. Further clinical studies are

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Table 1 Experience with the Airtraq optical laryngoscope (AOL) for tracheal intubation in infants and young children

Case	Age	Weight (kg)	AOL[a]	Tube ID (mm)	Attempts[b]	Time[c] (s)
1	18 months	11.6	P	4	1	30
2	14 months	11.0	P	4.5	1	45
3	7 months	7.4	P	4	1	76
4	2 months	3.1	I	3	1	44
5	9 years[d]	22.6	P	5[e]	1	40
6	20 months	11.0	P	4	1	50
7	2 years	12.5	P	4.5	1	53
8	18 months	8.6	P	5[f]	1	50
9	10 days	3.1	I	3	2	95
10	4 years	16.3	P	5	1	46
11	15 months	10.6	P	4.5	1	47
12	16 months	9.9	P	4[f]	2	122
13	14 months	8.3	P	4	1	35
14	12 months	7.9	P	4	1	55
15	3 months[g]	6.0	I	3.5	1	35
16	7 months	7.4	P	4	1	32
17	15 months	9.1	P	4.5	1	60
18	6 years	20.0	P	5.5[f]	1	25
19	3 months	4.3	P	4[f]	3	167
20	14 days	3.5	I	3.5	1	53

[a] Size of Airtraq optical laryngoscope: I, infant; P, pediatric

[b] Number of attempts to successful intubation

[c] Time to completion of endotracheal intubation

[d] Treacher Collins syndrome

[e] Tube with cuff

[f] Preformed tube (RAE oral, Mallinckrodt, Athlone, Eire)

[g] Pfeiffer syndrome

necessary to confirm the usefulness of the AOL for tracheal intubation in infants and young children, especially in difficult airway situations.

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