Letters to Editor

Laryngoscopic view in a child with previous difficult tracheal intubation and a history of growth hormone therapy

Sir,

It is well known that laryngoscopic difficulty may change with age among patients with disorders characterised by difficult tracheal intubation. For example, sufficient mandibular growth in patients with Pierre Robin syndrome (PRS) during early childhood markedly reduces the degree of airway problems in later years.[1] However, laryngoscopy may be more difficult with age in patients with Treacher Collins syndrome (TCS).[2] We herein describe the laryngoscopic changes that occurred 7 years after the first difficult tracheal intubation in a child born small for gestational age (SGA) and with a history of growth hormone (GH) therapy for short stature.

A 12-year-old SGA girl with short stature and autism spectrum disorder was scheduled for dental treatment under general anaesthesia. She had already undergone the same treatment under general anaesthesia 7 years back, and we had encountered a difficult airway [Cormack–Lehane (C-L) grade III] due to mandibular growth retardation despite ongoing GH therapy. After the treatment, she refused to undergo further GH therapy, and the therapy was thus discontinued about 2 years before the present dental treatment. She refused various airway assessment tests except the upper lip bite test (ULBT). Although the result of the ULBT was class II, which is more frequent with concomitant C-L grades I and II, her mandibular growth appeared to remain retarded and difficult laryngoscopy was anticipated. After preparing difficult airway management kits including a laryngeal mask airway, gum elastic bougie, and videolaryngoscopes, anaesthesia was induced with propofol, mask ventilation was confirmed, and rocuronium was administered. Direct laryngoscopy using both Macintosh and McGRATH™ MAC (Medtronic, MN, USA) laryngoscopes revealed C-L grade III, and external laryngeal pressure (ELP) did not facilitate visualisation of even a portion of the interarytenoid notch, unlike during the previous anaesthesia. However, McGRATH™ MAC video laryngoscopy with ELP revealed a better laryngeal view in which a portion of the vocal fold could be seen. Therefore, we chose nasotracheal intubation with a nasogastric tube–guided technique using a 12-Fr nasogastric tube inserted inside the nasal Ring-Adair-Elwyn (RAE) tube (inner diameter, 5.5 mm) and Magill forceps to minimise worsening of the laryngeal view due to the spreading of epistaxis over the pharyngeal space.[3] This technique allowed for successful intubation on the second attempt, and no desaturation occurred during the course of intubation. The dental treatment was performed uneventfully. The patient was safely extubated, and the postextubation period was also uneventful.

In their review article, Davidopoulou and Chatzigianni concluded that children with a short stature of different origins, including SGA children, develop similar craniofacial characteristics including a shorter length of the cranial base and mandible, a proportionately smaller posterior than anterior facial height, a retrognathic face, and posterior rotation of the mandible.[4] Interestingly, a shorter cranial base length and mandibular length are also a craniofacial characteristic of both PRS and TCS,[5,6] and the difficulty of laryngoscopy in patients with these disorders may change with age as mentioned above. Regarding SGA children, several studies have provided evidence that catch-up growth occurs mainly during the first 2 years of life and that further catch-up is limited.[4] Furthermore, the exact amount and pattern of craniofacial growth are unpredictable after GH administration in children with reduced somatic growth.[4] Taken together, our experience and these reports suggest that SGA children might be better regarded similarly to patients with PRS and TCS in terms of airway assessment irrespective of GH therapy unless catch-up growth is completed by 2 years of age. Anaesthesiologists should also bear in mind that laryngoscopy of these SGA children might be more difficult as they become older.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient's mother has given consent for her daughter's clinical information to be reported in the journal. The patient's mother understands that name and initials of her daughter will not be published and due efforts will be made to conceal identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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