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## LETTER TO THE EDITOR

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### SUCCESSFUL INTUBATION USING McGRATH® MAC IN A PATIENT WITH TREACHER COLLINS SYNDROME

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Treacher Collins syndrome (TCS) is a congenital malformation of craniofacial development, which is associated with difficult tracheal intubation<sup>1</sup>. Several video laryngoscopes that have recently been developed have been shown to improve the laryngeal view in pediatric patients with difficult airways, including patients with TCS<sup>2-4</sup>. McGRATH® MAC (MAC; Aircraft Medical, Edinburgh, UK) has more recently been developed as a new video laryngoscope modified from McGRATH® Series 5 and may provide a better view of the glottis for intubation in adult patients<sup>5</sup>. However, there has been no report on the usefulness of MAC for intubation in pediatric patients with difficult airways.

A 13-year-old boy (146 cm; 36 kg) with TCS was scheduled for exotropia surgery under general anesthesia. Tetralogy of Fallot repair had been performed at the age of 4 years, when the trachea was intubated using a Macintosh laryngoscope despite Cormack-Lehane classification grade 3. At the age of 11 years, when mandibular distraction osteogenesis was performed, fiberoptic scope-guided endotracheal intubation was accomplished after failure of intubation using a Macintosh laryngoscope at a regional hospital. The patient showed the characteristic facial appearance of TCS such as micrognathia (**Fig. 1-A**). Thyromental and interincisor distances were 40 mm and 18 mm, respectively, showing moderate trismus. A magnetic resonance imaging scan revealed a relatively long distance from the mouth to the larynx (**Fig. 1-B**). Since we considered the airway to be patent in this patient under mask ventilation, general anesthesia was induced with 70 mg of propofol after setting up alternative devices to secure the airway, including equipment for percutaneous tracheostomy and a transtracheal jet ventilator. After mask ventilation has been successfully achieved, neuromuscular block was induced with 20 mg of rocuronium. In order to check the difficult airway in this patient, we used a Macintosh blade no. 3 and failed to visualize the epiglottis, defined as Cormack-Lehane classification grade 4. An attempt was then made to intubate using MAC with blade no. 3 (**Fig. 1-C**). The blade was easily inserted into the larynx and exposed the epiglottis and the vocal cord, defined as Cormack-Lehane classification grade 1. The trachea was successfully intubated with an ID 6.0 mm tracheal tube without difficulty.

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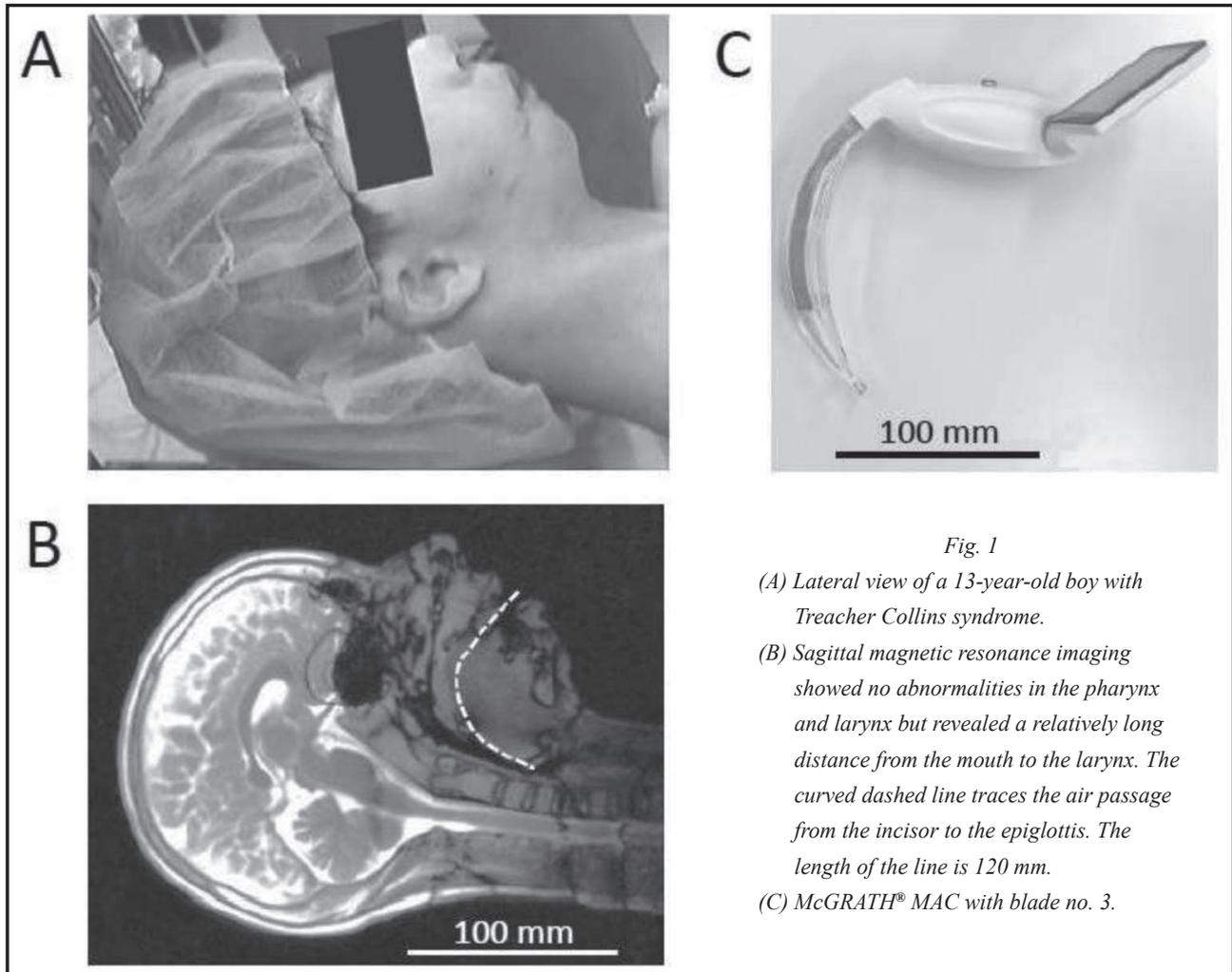
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*Fig. 1*

- (A) Lateral view of a 13-year-old boy with Treacher Collins syndrome.
- (B) Sagittal magnetic resonance imaging showed no abnormalities in the pharynx and larynx but revealed a relatively long distance from the mouth to the larynx. The curved dashed line traces the air passage from the incisor to the epiglottis. The length of the line is 120 mm.
- (C) McGrATH® MAC with blade no. 3.

Video-laryngoscopes such as the GlideScope®, Glidescope Cobalt® (Verathon Medical Inc., Bothell, WA, USA) and Pentax-Airway Scope® (AWS; Hoya Co., Tokyo, Japan) have been reported to be useful for tracheal intubation in patients with difficult airways<sup>2-4</sup>. However, the usefulness of video laryngoscopes differs in patients with difficult airways, depending on features and severity of their anatomical abnormality in the oral cavity, pharynx and larynx<sup>6</sup>. Features of TCS include micrognathia, small mouth, high arched palate, cleft

palate and velopharyngeal incompetence, and tracheal intubation becomes difficult with advance of age<sup>1</sup>. In this patient, blade no. 3 of MAC could easily reach the larynx and visualize the glottis and vocal cord. This is probably because the shape of the blade of MAC fitted to the oropharyngeal features in this patient. Thus, the McGrath MAC may be useful for tracheal intubation in pediatric patients who have micrognathia and a small mouth as were seen in this patient.

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