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Letter to the Editor

Successful nasotracheal intubation in a pediatric patient with Goldenhar's Syndrome using McGRATH™ videolaryngoscope

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Dear Editor,

Goldenhar Syndrome (GS) (oculo-auriculo-vertebral syndrome) is a rare congenital hemicraniofacial disorder and it occurs one in every 3000 to 5000 live births (1). GS is characterized by external ear malformations, hypoplastic zygomatic arch, micrognathia, facial asymmetry and hypoplasia. Difficult or impossible laryngoscopy of cases with GS due to micrognathia and jaw joint problems have been reported in the literature as case reports. Firstly in the literature, we report airway management of 5-year-old child with GS for jaw surgery at our university hospital and succesfully using of McGRATH videolaryngoscope (VL) for the management of airway via nasal intubation.

A 5-year-old, 20-kg, 125 cm child, who had dental abnormalities, facial asymmetry, macroglossia, left sided deformity of the mandible and micrognathia, was scheduled for jaw surgery who was diagnosed with GS (Figure 1,2). Airway evaluation showed Mallampati class II. Past surgical history included inguinal hernia surgery, but there was no any knowledge about difficult intubation during anesthesia management.

After 8 h of fasting and written informed consent was obtained from the patient's parents, the patient was taken to the operating room. In accordance with the difficult airway algorithm, supraglottic airway devices, tubes and styles in different lengths, fiberoptic bronchocope, videolaryngoscope blades in different lengths and tracheostomy sets were used. In addition to that an experienced anesthetist was present. Preoxygenation was perfomed with 100% oxygen for 5 minutes and anesthesia was induced with sevoflurane at increasing concentration. During lung ventilation via face mask, we had difficulty in grasping mandible by hand because of the left sided deformity of the mandible. When the depth of anesthesia was sufficiently deep, propofol 40 mg and fentanyl 20 µg was administered. Rocuronium 10 mg was applied for muscle relaxation. Direct laryngoscopy using Macintosh 2 blade was perfomed and Cormack-Lehane score was detected as 4. Intubation was failed at first attempt and Miller 2 blade was used for direct laryngoscopy for second attempt. But, intubation was failed again despite using magill pens and external pressure on the larynx. Patient was ventilated 1 minute again and intubation was attempted again with McGRATH VL (Size 1) by another anesthetist experienced with using McGRATH VL.

During videolaryngoscopy, Cormack-Lehane score was 2 and endotracheal tube of 4.5-mm internal diameter was inserted through vocal cords without difficulty. Patient was intubated using videolaryngoscopy. During these attempts, desaturation and bradycardy did not develop. The intraoperative course was uneventful. Sugammadex 40 mg was performed to reverse muscle relaxation. After spontaneous breathing is sufficient, patient's trachea was extubated smoothly.

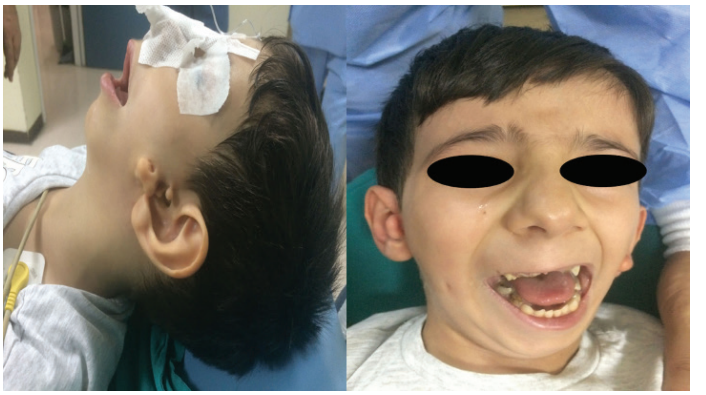

Figure 1. Dental abnormalities, facial asymmetry, left sided deformity of the mandible and micrognathia

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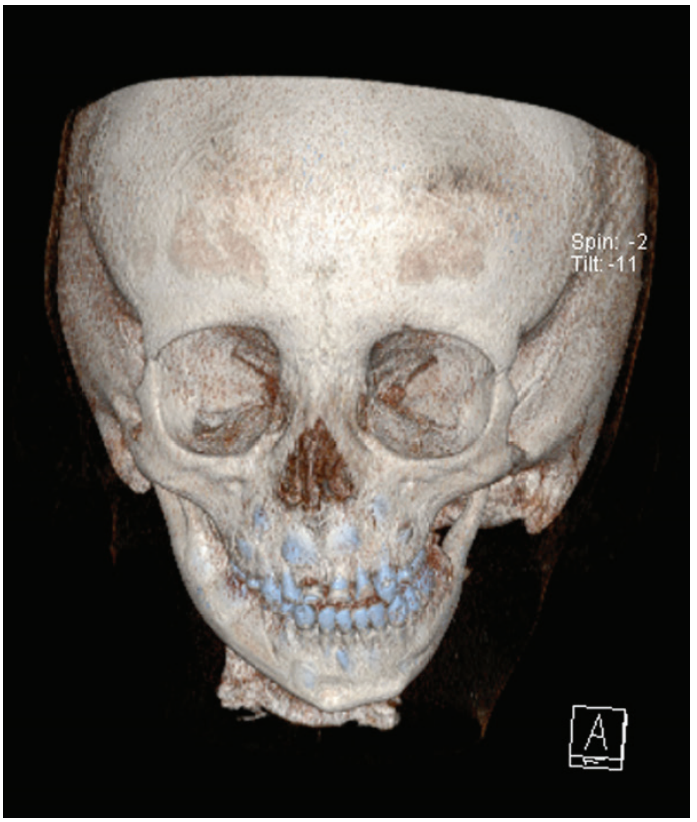

Figure 2. Computed tomography image of patients, left sided deformity of the mandible and micrognathia.

Goldenhar Syndrome (GS) is a congenital rare syndrome which is characterized by unilateral underdevelopment of ear, jaw and cheek on the same side of face. Especially, characteristics of GS, affect airway, are more important factors in difficult airway development and change formulation of plan for airway management. Difficult mask ventilation and intubation has been reported in GS due to these features such as our patient and reported to be as high as 39,9% (2).

In difficult airway management of patients with GS, many anesthetic methods and devices have been reported. Sasanuma and et al. (3) reported that airtraq optical laryngoscope was useful for management of difficult airway with GS, but this was done as awake procedure depending on patient's cooperation. In airway management of our patient, McGRATH VL was selected for airway device. Our clinical experience is sufficient in practice. For this reason, we preferred to use Mc GRATH VL in this case. McGRATH VL is easily used by assistant doctors in our clinic because of its ease of application and similar structure to direct laryngoscope. So, experience of application is important for using McGRATH VL. According to our clinical experiences, nasal intubation with McGRATH VL can be a good choice in cases who has anticipated difficult airway. Because the nasally tube can be advanced more easily with the help of a videolaryngoscope. In addition, McGRATH videolaryngoscopy can also be used in youngest children.

Successful using of flexible laryngeal mask airway was reported in patient with GS (4). Awake procedures such as fiberoptic intubation is applied as first choice for anticipated difficult airway. Sahni and et al. (2) reported a patient that was perfomed orotracheal fiberoptic intubation successfuly in asleep patient with GS. Successful awake fiberoptic intubation via a laryngeal mask in an infant with GS was reported (5). But in our case, the child could have had difficulty in providing cooperation during fiberoptic bronhoscopy. That's why, after failed intubation by direct laryngoscopy, McGRATH VL was selected as a good alternative airway device.

In conclusion, using McGRATH VL in patients with difficult intubation characteristics diagnosed with GS may be a good alternative method for intubation of trachea. McGRATH VL will be useful and safe for management of difficult airway when used by experienced anesthetist.

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REFERENCES

1. Palmisano BW, Rusy LM. Anesthesia for plastic surgery. In: Gregory GA, editor. Pediatric anesthesia. 4th edition. Churchill Livingstone, New York, 2002;707-45.
2. Johnson CM, Sims C. Awake fiberoptic intubation via a laryngeal mask in an infant with Goldenhar's syndrome. Anaesth Intensive Care 1994;22(2):194-7.
3. Sahni N, Bhatia N. Successful management of difficult airway in an adult patient of Goldenhar syndrome. Saudi J Anesth 2014;8(1):98-100.
4. Sasanuma H, Niwa Y, Shimada N, Machida M, Irei T, Hayashi K, et al. Tracheal intubation using Airtraq optical laryngoscope in an adult patient with Goldenhar syndrome. Masui 2013;62(7):867-9.
5. Hirata M, Miwa T, Ono K, Namatame R, Hiroki K. Analysis of difficult tracheal intubation in patients with first and second brachial arch syndrome. Masui 2001;50(9):986-90.