

A Case Series of Unique Airway Management in Patients with Micrognathia

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Background

Micrognathia is defined as mandibular hypoplasia. From mask ventilation to intubation, micrognathia can present a daunting challenge in airway management for anesthesiologists. Proposed methods include oral airways, laryngeal mask airways, video laryngoscopy, fiberoptic scope, and surgical suspension laryngoscopy or endoscopy. We present cases when these methods alone proved inefficient.

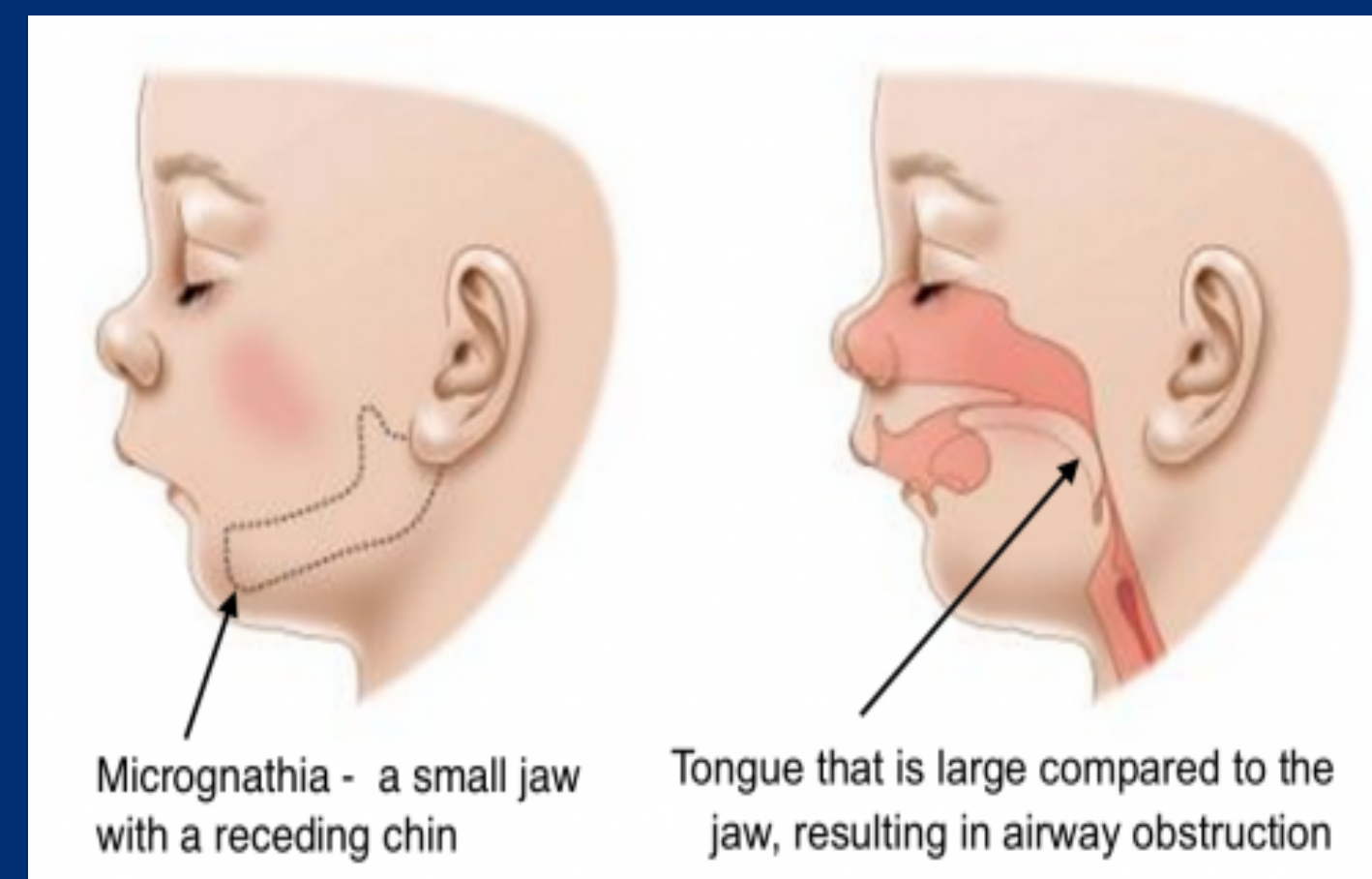


Figure 1: Illustration of micrognathia.
From <http://craniofacialteamtexas.com/pierre-robin-sequence-prs/>

Case 1

4-week-old male with a past medical history of micrognathia, cranial dysmorphism, ventricular septal defect, and coarctation of the aorta presenting for Nissen fundoplication and gastrostomy tube placement. Video laryngoscopy unsuccessful. Intubated through a laryngeal mask airway (LMA) using a fiberoptic scope.

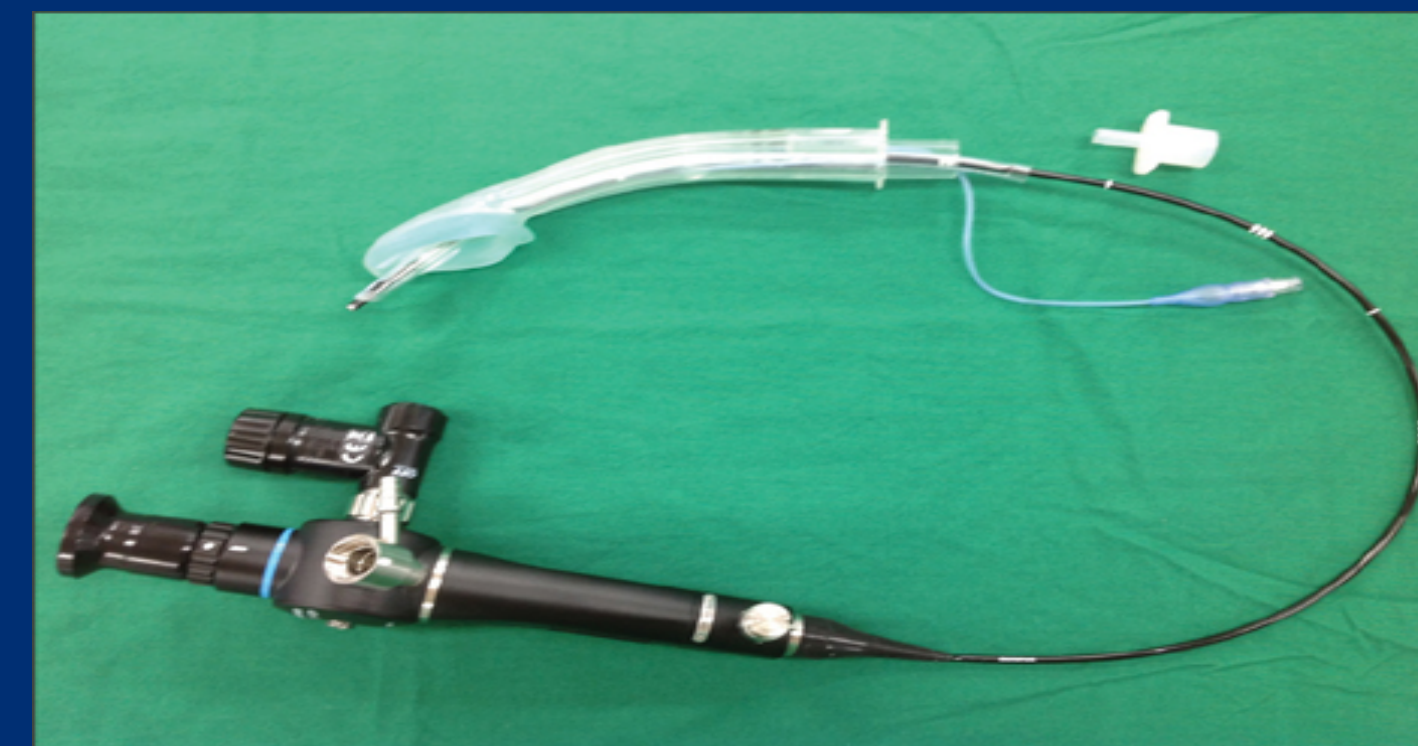


Figure 2: Example of fiberoptic intubation through LMA from <https://synapse.koreamed.org/DOIx.php?id=10.4097/kjae.2013.65.1.61&vmode=PUBREADER>

Case 2

2-month-old male with a past medical history of micrognathia and seizures with apneic episodes presenting for surgical intubation after failed attempt at bedside. Surgical Parson's laryngoscopy was unsuccessful. Intubated via concurrent video laryngoscopy and surgical endoscope.

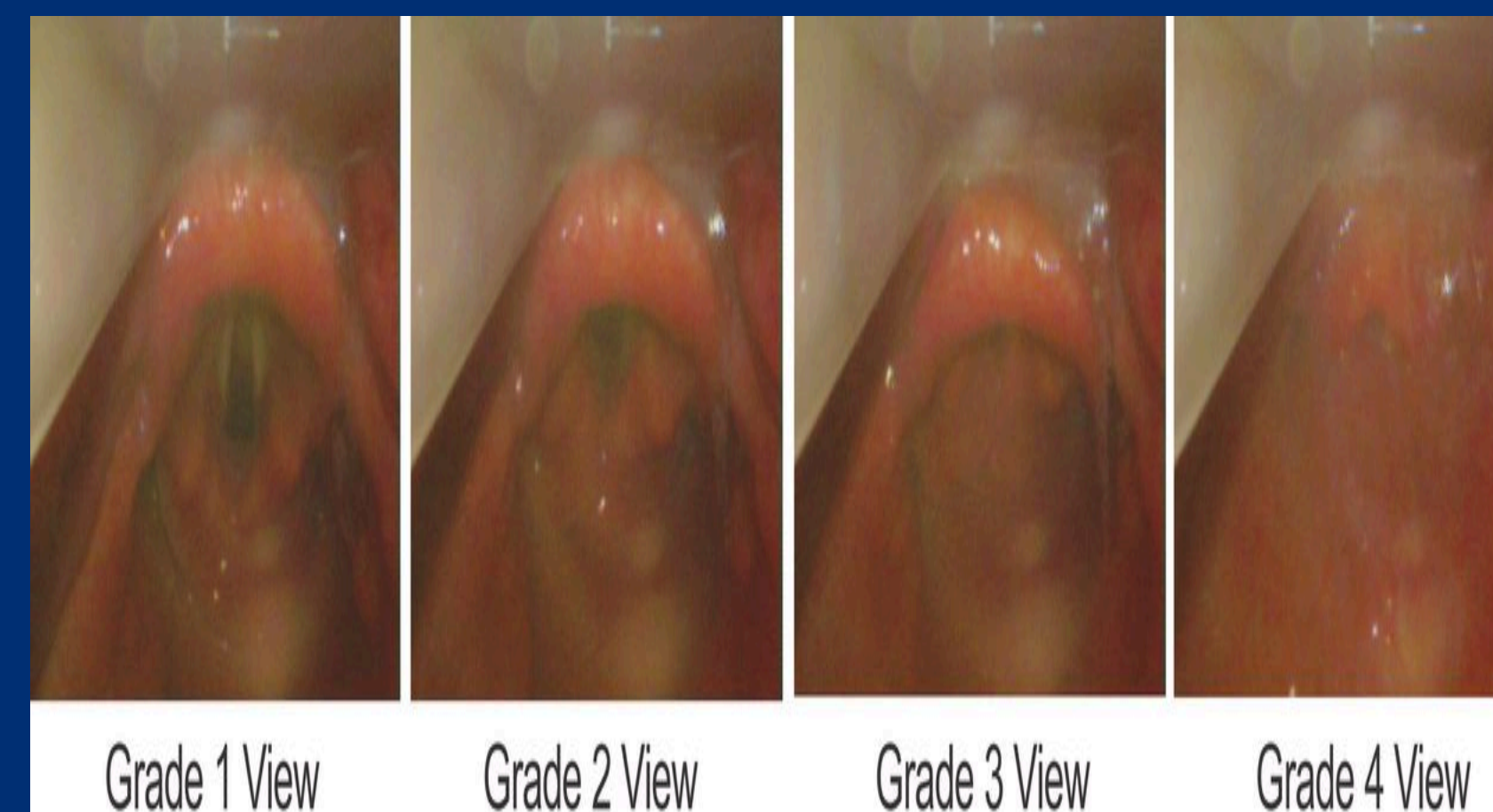


Figure 3: Example of Cormack-Lehane airway view grading system from <http://rc.rcjournal.com/content/59/6/825>

Case 3

2-month-old female with Pierre Robin sequence and severe sleep apnea presenting for mandibular distractor placement. Nasal fiberoptic intubation unsuccessful. Orally intubated with surgical Parson's laryngoscope. Then oral tube exchanged for nasal via concurrent oral video laryngoscopy and nasal fiberoptic scope.

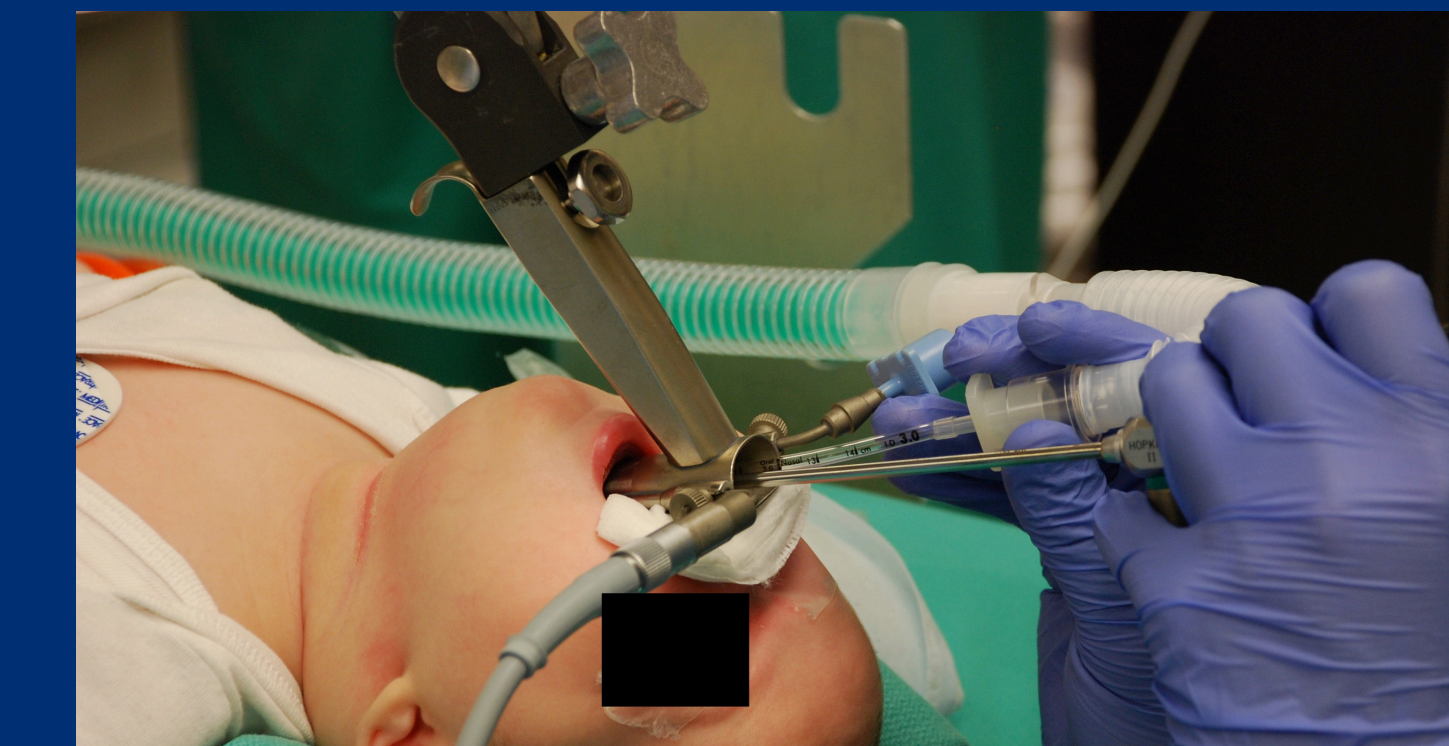


Figure 4: Example of suspension laryngoscopy and endoscopy from <https://medicine.uiowa.edu/iowaprotocols/pediatric-airway-sizing>

Discussion

Using oral airways with mask ventilation was life saving as airway management took up to an hour in these cases that required a secured airway. Unique measures taken to achieve this goal included removal of the LMA by anchoring the endotracheal tube with the fiberoptic scope tip (case 1), use of a video laryngoscopy with surgical endoscope and cricoid pressure (case 2), suturing of the tongue to the bottom lip and oral to nasal tube exchange with use of both a fiberoptic scope and video laryngoscopy (case 3).

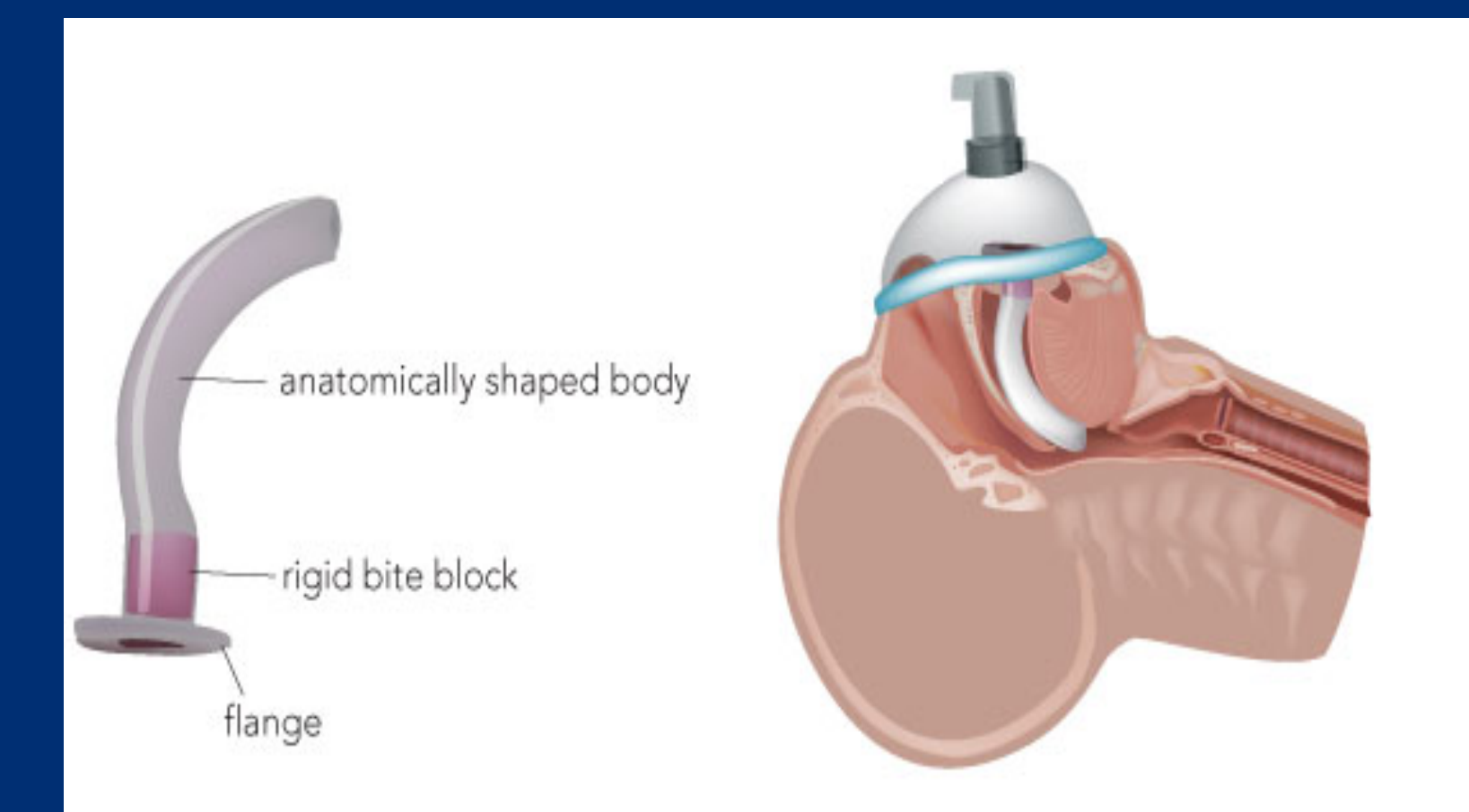


Figure 5: Illustration of an oral airway from <https://skillsmodules.atitesting.com/SkillsModulesContent/content2/airway-management/ap.html>

References

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 Jarrahy R. Controversies in the management of neonatal micrognathia: to distract or not to distract, that is the question. *J Craniofac Surg*. 2012;23:243-249. doi: 10.1097/SCS.0b013e318241b90a.
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