

Anterior Tonsillar Pillar Perforation During GlideScope® Intubation

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Introduction: Videolaryngoscopes improve glottic visualization and success rates of both first-attempt and rescue tracheal intubation.¹ Experts advocate their use as first-line devices in pregnancy due to the higher risk of failed intubation.¹ Contributing factors to higher risk of failed intubation include weight gain, increased breast size, greater airway mucosa edema and vascularity, oxytocin and fluid administration (with Valsalva maneuver may contribute to worsening Mallampati class during labor and delivery), faster oxygen desaturation, predisposition to gastro-esophageal reflux and the typically emergent setting.¹ Associated supra- and sub-glottic trauma have been reported in the setting of styletted endotracheal tubes (sETT) but no injuries involving obstetric patients have been published.² We present the first report of GlideScope®-associated supraglottic injury in the obstetric population.

Case description: A 39yo G3P2 at 28w5d, BMI 29, with recent deep vein thrombosis on subcutaneous enoxaparin 80mg twice daily, presented with placental abruption requiring emergent cesarean delivery. Neuraxial anesthesia was not an option due to the last dose of enoxaparin given 9hours earlier. Her airway evaluation was Mallampati class 3 with partial ability to prognath the mandible. After positioning on a Troop™ pillow, general anesthesia was induced; a GlideScope® 3 with a sETT were used.

Complications and Outcome: Immediately following intubation, the sETT was noted to have perforated the anterior tonsillar pillar en route to the glottic opening. An intraoperative ENT evaluation recommended extubation at the end of the case, which was uneventful; there was minimal bleeding. Soft diet, p.o. amoxicillin for 5 days, chlorhexidine rinses, and viscous lidocaine prn were prescribed. The patient denied pharyngeal pain during 3 days of in-patient follow-up.



Figure 1: Endotracheal tube perforating right anterior tonsillar pillar



Figure 2: Intubating technique with a Glidescope

Discussion: Presumed increased airway friability due to pregnancy and anticoagulated status were cause for special concern in this case. Fortunately, conservative management was sufficient, and primary closure was not required. Notwithstanding clear visualization of the larynx, GlideScopes® may be associated with soft-tissue trauma.² Alignment of oral, pharyngeal and tracheal axes are not required, so rigid 60 degree ETT stylets matching the curve of the blade are typically used to navigate the marked angle.² The ETT is then directed almost perpendicular to the tracheal axis, risking subglottic injury.² Upward force on the laryngoscope may lead to tenting of the tonsillar pillars,³ but attention diverted to the video monitor rather than oropharynx, and unnecessary force while introducing the sETT may have contributed to the injury in this case.

The prevalence of videolaryngoscope-associated injury is believed to be rising with their increasing acceptance.³ Notably, the C-MAC® blade, similarly curved to a Macintosh, does not require a pre-curved sETT. Higher success and lower tissue trauma were seen with the C-MAC® and McGrath™ vs. 4 videolaryngoscopes in simulated difficult airways.⁴ No comparisons of the ease of success and safety of available videolaryngoscopes have been conducted in obstetric patients. This case illustrates that clinicians must first look into the mouth when inserting the blade and sETT, and look at the monitor when advancing both blade and ETT, with the awareness that the ETT tip may pass through “blind spots” where it is not visualized; excessive force should therefore always be avoided.⁵

References:

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