More Support for Using the Gum Elastic Bougie for Difficult Airways

In this prospective, randomized study from Japan, researchers compared the ease of intubation using a gum elastic bougie and a malleable metal stylet in 60 adults who underwent rapid sequence intubation with and without cricoid pressure.

The laryngeal view was graded before intubation according to Cook's modified laryngeal classification system (grade 1, excellent visibility; grade 2a, posterior cords visible; grade 2b, only arytenoids visible; grade 3a, epiglottis visible and liftable; grade 3b, epiglottis adherent to the pharynx; grade 4, no laryngeal structures seen). The view was then categorized according to the grade as easy (grades 1 and 2a), restricted (2b and 3a), or difficult (3b and 4). Ease of intubation was assessed using a 100-mm visual analog scale (VAS; 0=easy and 100=difficult).

When cricoid pressure was applied, the laryngeal grade remained the same in 26 patients (43.3%), worsened 1 grade in 17 (28.3%), worsened 2 grades in 14 (23.3%), and improved in 3 (5.0%) patients. Intubation was successful on the first attempt in 58 patients (96.7%); the remaining 2 patients, both with a grade 3b laryngeal view, required intubation with other devices and were excluded from the analysis. Intubation time did not differ between the bougie-easy and bougie-restricted groups (31±7 vs. 33±4; \( P=0.34 \)), but there was a 6-second difference between the stylet-easy and stylet-restricted groups (27+3 vs. 33+8 seconds; \( P=0.013 \)). The VAS score for ease of intubation with cricoid pressure was significantly higher (\( P<0.01 \)) in the stylet-restricted group than in the other 3 groups. The authors concluded that applying cricoid pressure worsens the laryngeal view and that the bougie is more effective than the stylet for facilitating intubation.

Comment: The study helps affirm the gum elastic bougie as a useful airway adjunct and is particularly germane, as the intubating conditions that were assessed -- rapid sequence induction with application of cricoid pressure -- are similar to those encountered in the emergency department. The finding that cricoid pressure often worsens laryngoscopic view is consistent with other studies' results and bears noting; external laryngeal manipulation may be required to reposition the larynx in the field of view.

— Richard D. Zane, MD

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