Use of a Bougie Reduces C-Spine Movement During Intubation with the Airway Scope

With a bougie, intubation is possible without fully visualizing the glottis.

The Pentax Airway Scope, a video laryngoscope, causes less cervical spine movement than conventional laryngoscopes during intubation without manual C-spine stabilization (JW Emerg Med Sep 28 2007). Researchers in Japan evaluated whether use of a bougie further reduces C-spine movement during Airway Scope intubation under general anesthesia. They randomized 30 nonobese patients who did not have C-spine abnormality or anticipated difficult intubation to undergo intubation with the Airway Scope either with or without a bougie. A single experienced anesthesiologist performed all intubations, and radiologists blinded to the method of intubation measured C-spine movement at multiple levels by fluoroscopy.

All patients were successfully intubated on the first attempt. Mean times to intubation were similar in the bougie and no-bougie groups (19.4 and 18.2 seconds). All patients intubated with the Airway Scope without a bougie had grade 1 laryngoscopy views. For intubations with the bougie, the Airway Scope was advanced only to the point of minimal visualization of the glottis sufficient for bougie insertion. C-spine movement occurred mostly in the first two cervical vertebrae and was significantly greater when the Airway Scope was used without versus with the bougie (median, 15.1 vs. 7.0 degrees).

Comment: Unfortunately, these investigators did not use any C-spine stabilization, which is applied universally when intubating patients at risk for C-spine injury. In a previous study that compared direct and video laryngoscopy (GlideScope) during intubation with manual C-spine stabilization, video laryngoscopy improved glottic view but did not decrease C-spine movement (JW Emerg Med Mar 14 2008). The Airway Scope’s lens has central cross hairs that must be centered on the glottis for intubation. This study’s real message is that a bougie can be helpful when the aiming mark cannot be aligned with the glottis.

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Published in Journal Watch Emergency Medicine June 12, 2009

Citation(s):