Manual C-Spine Stabilization and Difficult Intubation

C-spine stabilization makes intubation more difficult in patients undergoing elective anesthesia.

Previous studies of the effect of manual in-line stabilization of the cervical spine on direct laryngoscopy have relied on surrogate markers of intubation difficulty, such as laryngoscopic grade of view and requisite lifting force (JW Emerg Med Feb 13 2009 and JW Emerg Med Mar 14 2008). In the current study, investigators measured actual intubation success at a preset time (30 seconds) in addition to grade of view in a randomized controlled study of manual in-line stabilization in 200 adult patients who were undergoing intubation for general anesthesia at a single academic hospital in Quebec.

Patients with known risk factors for difficult airways were excluded. Each of seven experienced anesthesiologists used a Macintosh 3 laryngoscope blade and an endotracheal tube without a stylet or a bougie. The rate of failed intubation at 30 seconds was 50% in the 95 patients with C-spine stabilization versus 6% in the 105 patients without stabilization. In addition, 58% of patients in the stabilized group had grade III or IV Cormack-Lehane glottic views, whereas only 5% of patients in the group without stabilization had grade III views and none had grade IV views. All patients in the stabilized group in whom intubation failed were successfully intubated after stabilization was discontinued.

Comment: This study helps to quantify a concept that we already appreciate well — that manual C-spine stabilization during intubation with conventional direct laryngoscopy diminishes the view of the vocal cords and makes intubation more difficult. While the safety and efficacy of C-spine stabilization for limiting cord injury have not been established, stabilization is routinely recommended and frequently performed. The take-home message is that manual in-line stabilization makes direct laryngoscopy difficult. Of course, with video laryngoscopy, C-spine immobilization is much less of an issue for glottic visualization.

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