

Laryngoscopy Requires More Force When Manual In-Line Stabilization Is Used

Glottic view is also worse when manual in-line stabilization is applied.

Manual in-line stabilization (MILS) of the cervical spine (C-spine) during laryngoscopy is intended to minimize flexion or extension force on the potentially injured C-spine but might require intubators to apply more pressure than they would without MILS. To determine the effect of MILS on laryngoscopy force during intubation, experienced anesthesiologists (mean years of experience, 19) intubated 10 elective anesthesia patients with and without MILS (in random order) using a special Macintosh 3 laryngoscope blade with multiple pressure transducers. One patient was excluded from analysis for protocol violation.

The best glottic view obtained was the same with and without MILS in three patients but was worse with MILS in the other six patients (by more than 1 grade in 4 patients). Intubation was successful in seven patients with MILS and in nine patients without MILS. The maximum laryngoscope blade pressure at the time of best glottic view was significantly higher with MILS than without (717 mm Hg vs. 363 mm Hg). In analyses of the total work of intubation (obtained by integrating all pressures from each laryngoscopy) and of maximum pressures at various points during laryngoscopy, pressures were both clinically and statistically significantly higher with MILS than without.

Comment: The potential effect of increased laryngoscope blade pressure on soft tissues and unstable C-spine injuries is unknown but troubling. Editorialists caution that MILS is "standard of care" and its role will not easily be revisited. Until more is known, MILS is recommended for intubation of patients with potential C-spine instability, but the intubator must anticipate that MILS can make direct laryngoscopy more difficult, even in patients without other external markers of difficult intubation.

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Santoni BG et al. Manual in-line stabilization increases pressures applied by the laryngoscope blade during direct laryngoscopy and orotracheal intubation. *Anesthesiology* 2009 Jan; 110:24.

Manoach S and Paladino L. Laryngoscopy force, visualization, and intubation failure in acute trauma: Should we modify the practice of manual in-line stabilization? *Anesthesiology* 2009 Jan; 110:6.

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