Alternative intubation techniques vs Macintosh laryngoscopy in patients with cervical spine immobilization: systematic review and meta-analysis of randomized controlled trials

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L. Suppan1,*, M. R. Tramèr2,3, M. Niquille1, O. Grosgurin1 and C. Marti1

Geneva University Hospitals,

We searched MEDLINE, EMBASE, and the Cochrane Library for randomized controlled trials comparing any intubation device with the Macintosh laryngoscope in human subjects with cervical spine immobilization.

Results: Twenty-four trials (1866 patients) met inclusion criteria. With alternative intubation devices, the risk of intubation failure was lower compared with Macintosh laryngoscopy. Metaanalyses could be performed for Airtraq, Airwayscope, C-Mac, Glidescope, and McGrath.

The Airtraq was associated with a statistically significant reduction of the risk of intubation failure at the first attempt, a higher rate of Cormack–Lehane grade 1, a reduction of time until successful intubation, and a reduction of oropharyngeal complications. Other devices were associated with improved glottis visualization but no statistically significant differences in intubation failure or time to intubation compared with conventional laryngoscopy.

Conclusions: In situations where the spine is immobilized, the Airtraq device reduces the risk of intubation failure. There is a lack of evidence for the usefulness of other intubation devices.