

March 15, 2016

## Patients Should Be Intubated in an Upright, Head-Forward Position

Calvin A. Brown, III, MD, FAAEM

*In this retrospective study, patients intubated in a semi-erect, head-forward position had lower rates of peri-intubation adverse events than those in a supine position.*

Desaturation and poor direct laryngeal views are two important factors leading to intubation failure. In the operating room (OR), direct laryngoscopy is easier when patients are positioned with their backs up and heads forward (head of bed elevated  $\geq 30^\circ$ ), which tends to align the anatomic axes of the upper airway, yielding better glottic visualization. In addition, preoxygenation is more effective when patients are upright. Whether this patient position protects against adverse events during emergent intubation outside the OR is unknown.

To assess whether complications are less likely when patients are intubated in a head-forward position versus a supine position, investigators at a tertiary care academic medical center retrospectively examined records for 528 adult patients intubated outside the OR by the anesthesia airway team. Patients were excluded if they underwent cardiopulmonary resuscitation or had an initial intubation attempt by an emergency physician or with a device other than a direct laryngoscope. The primary endpoint was a composite of any episode of esophageal intubation, aspiration, hypoxia, or difficult intubation (defined as  $\geq 3$  attempts, intubation duration  $> 10$  minutes, or need for a surgical airway).

In analyses controlling for body-mass index, difficult airway predictors, and operator experience, patients intubated in the head-elevated position were less likely than those in the supine position to experience one of the complications of the primary endpoint (odds ratio, 0.42).

**Comment:** Although not necessarily applicable to the emergency department environment, out-of-OR intubations are the closest anesthesiologists get, and we might glean some useful information from this experience. The authors did not address why direct laryngoscopes were used, when video laryngoscopy should have been. When using a direct laryngoscope, or if a direct laryngoscope must be used, patients should be placed in a back-up and head-forward position whenever possible.

### Citation(s):

Khandelwal N et al. Head-elevated patient positioning decreases complications of emergent tracheal intubation in the ward and intensive care unit. *Anesth Analg* 2016 Feb 10; [e-pub].

(<http://dx.doi.org/10.1213/ANE.0000000000001184>)