Use a Smaller Laryngoscope Blade for Short Thyromental Distance

It provides a better view and higher success rate.

Short thyromental distance (measured from the mentum to the laryngeal notch, with short defined as <5 cm in adults) is associated with difficult intubation because of poor laryngoscopic view of the vocal cords. Investigators in India assessed whether using a shorter laryngoscope blade improves intubation success.

In the first part of the study, 11 adult patients with thyromental distance ≤5 cm and no other difficult airway attributes underwent direct laryngoscopy with each of a Macintosh size 2 (MAC2) and size 3 (MAC3) blade, in random order, after induction of general anesthesia. The investigators found that the laryngoscopic view was significantly better with the MAC2 blade.

In the second part of the study, they randomized 83 elective general anesthesia patients (ASA class I) to undergo laryngoscopy with either a MAC2 blade (47 patients) or MAC3 blade (36 patients) after induction of general anesthesia. If intubation was impossible (defined as three failed attempts), the other blade was used.

Fourteen patients in the MAC3 group and 3 in the MAC2 group had failed intubations and were crossed over to the other blade. Overall, 50 intubations were performed with each blade. The MAC2 group had a significantly better "best" laryngoscopic view than did the MAC3 group, both without and with external laryngeal manipulation. Without manipulation, the mean Cormack-Lehane grades were 2b (only arytenoids and epiglottis visible) in the MAC2 group versus 3 (only epiglottis visible) in the MAC3 group; with manipulation, mean grades were 2a versus 3, respectively. The MAC2 group had fewer attempts than did the MAC3 group (mean, 1 vs. 2), shorter intubation time (20 vs. 25 seconds), a higher percentage of Cormack-Lehane grade 1 scores (46% vs. 10%), and easier intubation.

Comment: Patients in this study were short (mean height, <5 feet), so their thyromental distance might have been appropriate for their size, hence arguing for use of the MAC2 blade. It would be more important to consider patients with short thyromental distance and normal stature, in whom the large tongue would make laryngoscopy more difficult. Video laryngoscopy eliminates much of this type of view problem, but until your department has a video laryngoscope, it might be worth checking that you have a MAC2 blade.

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