

Airway Assessment Using "LEMON" Score Predicts Difficult ED Intubation

Use of this tool can reduce the chance of unexpectedly encountering a difficult airway.

As many as 1% of emergency department intubations end up as a "failed airway" (unable to intubate the patient). One tool developed to determine which patients might pose airway management difficulties is the LEMON method. The authors of this study from Scotland developed an airway assessment score based on this method and determined the score's utility in predicting difficult airways in the ED. They studied 156 patients who were intubated successfully in a single ED between June 2002 and September 2003.

The score, with a maximum of 10 points, was calculated by assigning 1 point for each of the following LEMON criteria:

L=Look externally (facial trauma, large incisors, beard or moustache, and large tongue)

E=Evaluate the 3-3-2 rule (incisor distance <3 fingerbreadths, hyoid/mental distance <3 fingerbreadths, thyroid-to-mouth distance <2 fingerbreadths)

M=Mallampati (Mallampati score ≥ 3)

O=Obstruction (presence of any condition that could cause an obstructed airway)

N=Neck mobility (limited neck mobility).

For each patient, the airway assessment score was compared with the Cormack-Lehane laryngoscopic view seen during intubation (1=full view, 4=glottis not visualized). At intubation, 114 patients were classified as Cormack-Lehane grade 1 (defined by the authors as easy intubation), and 42 were classified as grade 2 or higher (defined by the authors as difficult intubation). Patients in the difficult-intubation group had significantly higher LEMON scores than did those in the easy-intubation group. Of the criteria used to calculate the score, only large incisors, inter-incisor distance <3 fingerbreadths, and thyroid-to-floor-of-mouth distance <2 fingerbreadths were associated significantly with difficult intubation.

Comment: Emergency physicians can significantly reduce their likelihood of inadvertently encountering difficult intubations by assessing airways before intubation. This study validates that the LEMON method predicts which patients have difficult-to-manage airways.

— *Diane M. Birnbaumer, MD, FACEP*

Published in Journal Watch Emergency Medicine February 16, 2005

CITATION(S):

Reed MJ et al. *Can an airway assessment score predict difficulty at intubation in the emergency department?* *Emerg Med J* 2005 Feb; 22:99-102.