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## Markers of Difficult Ventilation with a Supraglottic Airway Device

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*In large study of Southeast Asian patients, risk factors for difficult or failed ventilation with an SGA were short thyromental distance, cervical spine immobility, male sex, and age over 45.*

Risk factors for difficult bag-and-mask ventilation have been well validated, but less is known about risk factors for difficult use of supraglottic airway (SGA) devices. Investigators reviewed records for 14,480 adult surgery patients in whom an SGA was used between 2011 and 2013 at a tertiary hospital in Southeast Asia. Devices were chosen by the operator and included a variety of laryngeal mask airways and the i-gel; no dual-balloon SGAs (i.e., King-LT) were used.

Difficult ventilation — defined as excessive air leak, obstruction to gas flow, hypoxemia, or poor chest rise — occurred in 74 patients (0.5%). Most (58%) were managed successfully by repositioning or replacing the SGA, while the others required rescue tracheal intubation. Failure, defined as SGA removal followed by tracheal intubation, occurred in 0.2% of patients. Twenty-three percent of patients with difficult or failed ventilation suffered an adverse respiratory event. In multivariable analysis, risk factors for difficult or failed ventilation were short thyromental distance (odds ratio, 4.4), limited neck movement (OR, 2.8), male sex (OR, 1.8), and age >45 (OR, 1.7). Increasing body-mass index (BMI), a known marker of difficult bag-valve-mask ventilation, was not a risk factor here.

**Comment:** Older age and male sex are risk factors for difficult rescue ventilation with a supraglottic airway device. Short thyromental distance — historically a hallmark of difficult direct laryngoscopy — may affect SGA insertion and position and contribute to ineffective ventilation. Although not the case in this study, increasing BMI should be considered a predictor of difficult ventilation with an SGA. Repositioning or replacing the device should be a first-line maneuver if ventilation is difficult or failing in these patients.

### Citation(s):

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