High Failure Rate for Levitan FPS Scope in Predicted Difficult Intubations

In patients undergoing gynecologic surgery with manual in-line cervical spine stabilization, the failure rate was 20%.

The Levitan FPS (first pass success) Scope is a malleable stylet with a fiberoptic viewing port that is used with a direct laryngoscope to improve glottic view and intubation success. No prior study has compared intubation by direct laryngoscopy with and without the FPS. In this study, 94 healthy gynecologic surgery patients underwent intubation by Macintosh laryngoscopy with and without the FPS in sequential random order. Manual in-line spine stabilization was maintained throughout intubation to simulate a difficult airway. Operators were anesthesiologists who had performed more than 10 successful FPS intubations. Patients with significant gastroesophageal reflux disease, obesity (body mass index >45 kg/m²), predictors of difficult intubation, or history of difficult intubation were excluded.

Median percentage of glottic opening (POGO) scores were significantly higher when the Macintosh laryngoscope was used with the FPS than without (80% vs. 20%), but the proportion of Cormack-Lehane grade 1 and 2 glottic views was similar with the two techniques (64% and 56%). Intubation took longer when the Macintosh laryngoscope was used with the FPS than without, requiring more than 30 seconds in 69% versus 22% of patients and more than 60 seconds in 20% versus 4%. Release of cervical spine immobilization or use of a bougie was required for successful intubation in 20% of patients with each technique.

Comment: Use of the Levitan FPS Scope improved overall glottic views by POGO score, but did not provide a higher proportion of Cormack-Lehane grade 1 and 2 views, and substantially increased the time to intubation. The 20% intubation failure rate with the FPS is high and troubling. A better approach would be to avoid direct laryngoscopy altogether and use a video-assisted device, which would yield higher intubation success rates for expected difficult intubations.

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- Medline abstract (Free)

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