

## Comparison of the Shikani Optical Stylet To Direct Laryngoscopy for Orotracheal Intubation by a First Year Anesthesiology Resident

Christopher F. Young, M.D., William H. Rosenblatt, M.D.  
Anesthesiology, Yale-New Haven Hospital, New Haven, Connecticut.

### Introduction

The Shikani Optical Stylet (Clarus Medical, LLC, Minneapolis, MN) was developed as an aid for difficult intubations.<sup>1</sup> It is a malleable, stainless steel, J-shaped endoscope with polymeric light carrying fibers and an optical eyepiece that can be used as a stand-alone device, or with a camera and monitor. It is distinct from similar advanced rigid fiberoptic devices (e.g., Bullard, Wu, Upsher scopes) in that it has no integrated laryngoscope blade and the shape of the stylet is adjustable. Though FDA-approved in 1996, it has been the subject of few published studies.<sup>2</sup> A series of patients was studied to determine if a first year anesthesiology resident could use the Shikani Optical Stylet (SOS) as the primary tool for orotracheal intubation as efficaciously, efficiently, and safely as using direct laryngoscopy (DL).

### Methods

Ninety consecutive patients requiring general endotracheal anesthesia were studied. A single resident operator intubated the first 45 patients with the SOS, and the next 45 patients with a laryngoscope and a Macintosh blade. Intubations were timed and graded as easy, intermediate, or challenging.

### Results

**SOS Group:** The mean time to intubate was 25.3s (range 10-93s). Forty-two patients were graded as easy to intubate and three were intermediate. There were no case delays or complications associated with use of the SOS.

**DL Group:** The mean time to intubate was 29.5s (range 12-120s). Thirty-nine intubations were graded as easy, four were intermediate, and two were challenging. There were no case delays associated with use of DL. The only complication was a single 3mm tongue laceration that did not require subsequent medical attention.

**Statistical Analysis:** The SOS and DL groups were not statistically different ( $P < .05$ ) in age, airway indices, body mass index, or time required to intubate.

### Discussion

In this series of patients it was found that a first year anesthesiology resident could use the SOS as efficaciously, efficiently, and with as few complications as DL. Indeed, this small series suggests that the SOS could be used on a routine basis in place of DL. The advantages of doing so include the potential for less cardiovascular stimulation,<sup>3</sup> less oropharyngeal and dental trauma, and maintenance of skills with an advanced fiberoptic device for managing difficult airways.

Though further investigation is necessary, use of the SOS for orotracheal intubation is consistent with the move towards reduced invasiveness in medical procedures.<sup>3</sup> The tissue distortion associated with DL, resultant cardiovascular, central nervous system and intraocular responses, as well as the pharmacologic agents employed to mitigate these responses, may be avoided with the embracement of less invasive, yet convenient and rapid means of tracheal intubation.

1. Shikani, AH. A new "seeing" stylet-scope and method for the management of the difficult airway.

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2. Agro F, et al. The seeing stylet: a new device for tracheal intubation. Resuscitation 2000;(44):177-180.

3. Kimura, et al. Use of the fiberoptic stylet scope (Styletscope™) reduces the hemodynamic response to intubation in normotensive and hypertensive patients. Can J Anesth 2001; (48):919-923.