

## CORRESPONDENCE

Anesthesiology  
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*In Reply:*—We are excited about du Plessis *et al.*'s excellent clinical study.<sup>1</sup> Their findings strongly support our conclusions. Together, our studies show that near-infrared spectroscopy for cerebral venous blood hemoglobin oxygen saturation can be a poor monitor of normal cerebral metabolic rate for oxygen during profoundly hypothermic cardiopulmonary bypass (CPB). Investigators who choose to use this technique during hypothermic CPB should be cautious in how they interpret their results.

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## Laryngeal Mask Airway for Access to the Upper Gastrointestinal Tract

*To the Editor:*—It is occasionally difficult to insert a nasogastric tube in the anesthetized patient or a gastroscope in an awake patient. I report two cases that illustrate a potential application of the laryngeal mask airway (LMA) to improve access to the upper gastrointestinal tract.

### Case Reports

#### Case 1

An ASA physical status 1, 46-yr-old, 80-kg man presented for awake diagnostic fiberoptic gastroscopy. Topical anesthesia using 10% lidocaine spray and sedation using 50 mg propofol were administered. The gastroscope was passed into the oropharynx through an oxygenating mouth piece, and the vocal cords and pharynx appeared normal. However, passage of the gastroscope became difficult when the tip repeatedly contacting the glottis. A variety of maneuvers were attempted to facilitate passage of the scope, including further topicalization and sedation, manipulation of the head and neck, and digital manipulation of the gastroscope tip. Eventually, the patient was asked to swallow a semiinflated #4 LMA in an attempt to shield the glottis from the gastroscope.<sup>1</sup> A clear airway immediately was obtained, and the device was well tolerated. The mouth piece was reinserted, and the gastroscope was passed behind the semiinflated cuff of the LMA and into the esophagus on the first attempt. The LMA was left in place during the procedure, and no abnormalities were found.

#### Case 2

An ASA physical status 2, 65-yr-old, 98-kg woman required insertion of a nasogastric tube during a laparotomy. Initial attempts using a

blind and then laryngoscope-guided technique with Magill's forceps were unsuccessful. A #4 LMA was placed easily behind the tracheal tube using the standard technique, and the cuff was semiinflated. A laryngoscope was inserted behind the proximal part of the LMA cuff, and the LMA was elevated to expose the posterior pharyngeal wall. The nasogastric tube was grasped with Magill's forceps from the oropharynx and moved along the posterior pharyngeal wall toward the hypopharynx. It passed through the upper esophageal sphincter and into the stomach on the first attempt. The LMA then was removed.

By physically isolating the glottis from the upper esophagus and forming a mold around it,<sup>2</sup> the LMA directs instrumentation passed along the posterior pharyngeal wall toward the esophagus, shields anterior pharyngeal structures from accidental impact, and allows 100% O<sub>2</sub> to be administered. Although the correctly placed LMA tip occupies the entire hypopharynx, the tissues and tip are sufficiently flexible to allow passage of instrumentation into the esophagus. Pace *et al.* showed that an 8-mm esophageal tube and an adult LMA may occupy the pharynx simultaneously without interfering with LMA function.<sup>3</sup>

In summary, these two cases illustrate the potential of the LMA as a guide to the gastrointestinal tract in awake and anesthetized patients.

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(Accepted for publication January 8, 1996.)

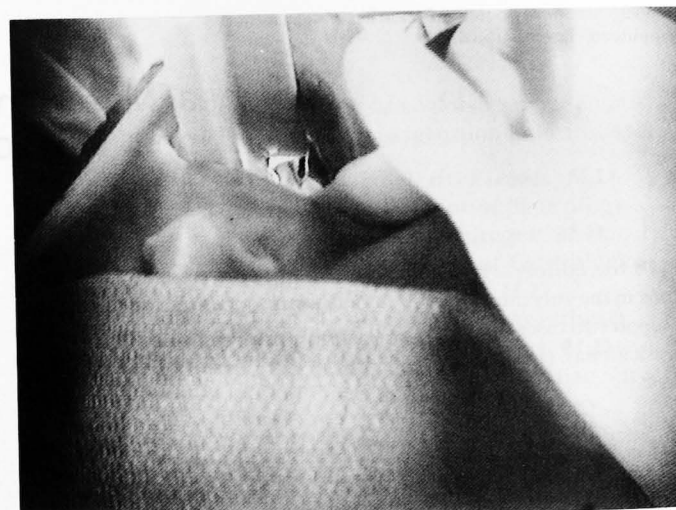
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## New Video System Improves Teaching of Direct Laryngoscopy

**To the Editor:**—Teaching direct laryngoscopy to the novice may be associated with anxiety for both instructor and student. This can be attributed partly to the fact that the instructor cannot see what the laryngoscopist is (or is not) visualizing during the procedure. In an effort to solve this problem, we used a newly developed direct laryngoscopy video system, the Airway Cam (Airway Cam Technologies, New York, NY), which may be purchased from the manufacturer for approximately \$6,000. The system consists of a headframe-mounted miniature camera (11-mm lens with 90° prism) connected to a video monitor. The frame is placed on the head, and the camera is adjusted until it is adjacent to the laryngoscopist's dominant eye (direct laryngoscopy is a monocular procedure; fig. 1). In this position, the camera allows the instructor and the student to view the



**Fig. 1.** The direct laryngoscopy video system (Airway Cam, Airway Cam Technologies, New York, NY) as it is worn by the laryngoscopist. The camera's position is just medial to the dominant eye. The camera also may be used in the lateral position.



**Fig. 2.** Typical image achieved during direct laryngoscopy, which allows the instructor to assist in the identification of important anatomic structures and suggest maneuvers to achieve optimal visualization.

entire laryngoscopy procedure, from insertion of the laryngoscope to placement of the endotracheal tube. Importantly, the instructor can assist with proper landmark identification and visually confirm successful tracheal intubation (fig. 2). The educational benefit may be enhanced if a standard videocassette recording of the procedure is reviewed later to highlight critical technical points.

Other video systems assist with direct laryngoscopy instruction. Most incorporate a fiberoptic bronchoscope into the laryngoscope, which often achieves excellent glottic views.<sup>1</sup> These views do not always correlate well with the view of the laryngoscopist, who must contend with the visual limitations imposed by oropharyngeal structures, avoided by the fiberoptic bronchoscope because of its location near the end of the laryngoscope blade. In contrast, the head-mounted

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camera system provides the laryngoscopist, including

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