

Surgeon-Performed Laryngeal Ultrasound Can Be Used to Screen for Vocal-Cord Palsy before Thyroid Surgery

malignancy and might also alter intraoperative management of the central neck. The routine use of preoperative laryngoscopy remains controversial. The selective use of preoperative laryngoscopy might be more cost-effective than routine laryngoscopy. In this study, it was possible for surgeons to sonographically evaluate vocal-cord movement in 84% of preopera-

tive patients. The authors state that physicians who perform cervical ultrasound can easily and quickly learn to perform laryngeal ultrasound and that it can be performed in the office in 1 minute. The authors estimated that nearly two thirds of preoperative laryngoscopies could be avoided by the use of preoperative screening laryngeal ultrasound.

ANALYSIS AND COMMENTARY ● ● ● ● ●

The preoperative identification of vocal-cord dysfunction may impact surgical decision-making and alter the operative approach for benign and malignant disease. Unfortunately, vocal-cord dysfunction is not reliably ruled out by the absence of dysphonia. This has led some experts to recommend laryngoscopy for all patients who are about to undergo thyroid surgery, regardless of preoperative or postoperative voice quality. This recommendation has been met with some opposition because fiberoptic laryngoscopy is an invasive and costly procedure that is not performed by all surgeons, and it has a fairly low likelihood of identifying vocal-cord dysfunction in the nondysphonic population.

In this study, the success rate for documenting vocal-cord movement was 84%, and only 1.8% of preoperative patients in phase 1 (1.3% overall) were found to have a vocal-cord palsy. The authors postulated that laryngeal ultrasound would be cost-effective and easily adopted by endocrine surgeons. They estimated that approximately two thirds of preoperative laryngoscopies could be avoided by the use of screening laryngeal ultrasound.

Laryngeal ultrasound has been proposed as an alternative to fiberoptic laryngoscopy by these authors and others because it is inexpensive, rapid, noninvasive, and painless and generates an image that can be stored in the medical record. Laryngeal ultrasound to evaluate vocal-cord movement is not widely used, however. The greatest enthusiasm for this technique

was historically in the pediatric population, in whom laryngoscopy is not tolerated without anesthesia (1, 2). The widespread adoption of this technique in the adult population has not occurred largely because of concerns regarding false negative results or the inability to sonographically image the vocal folds.

Several studies have had favorable findings, contributing to enthusiasm for laryngeal ultrasound in the adult population. Dedecjus et al. evaluated vocal-cord movement in 50 thyroidectomy patients during the preoperative and postoperative periods with both ultrasound and laryngoscopy. They found that the sonographic findings correlated with the laryngoscopy and concluded that it was a minimally invasive and reproducible method for the identification of postoperative vocal-cord dysfunction (3). Ooi et al. evaluated color Doppler imaging of the vocal cords and determined that it was just as accurate as laryngoscopy in the identification of vocal-cord palsy or paresis (4). Wang et al. evaluated 705 patients with laryngeal ultrasound and found that vocal-cord motion could be assessed in 87% of patients. Interestingly, they found laryngeal ultrasound to be more successful and accurate in female patients. They concluded that laryngeal ultrasound would be an alternative for the evaluation of vocal-cord movement in over 90% of women and about 50% of men (5). Not all studies have shared enthusiasm for laryngeal ultrasound, however. Sidhu et al. evaluated 100 postoperative patients with laryngeal ultrasound in 1999 and found that sensitivity was 62%, specificity was 97%, positive predictive value was 73%, and negative predictive value was

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95%; they concluded that the false positive and false negative rates were too high to use ultrasound as an alternative to nasopharyngoscopy (6).

There is an increasing demand from patients that medicine be practiced through minimally invasive low-risk procedures. The economics of health care delivery demand that we identify lower-cost alternatives to meet or exceed the standard of care. The culture of safety surrounding health care providers, and surgeons in particular, requires us to document our outcomes and complications. The findings of

Cheng et al. suggest that laryngeal ultrasound might be an expedient, noninvasive, inexpensive, reproducible, and accurate method to interrogate and document vocal-cord mobility in most patients. With the increased availability of compact high-resolution ultrasound machines in the offices of thyroid surgeons, the use of laryngeal ultrasound to evaluate vocal-cord motion is certain to gain momentum. When used correctly, laryngeal ultrasound could accurately screen patients and direct patients who have a higher pretest probability of vocal-cord dysfunction for laryngoscopy.

References

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