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Transnasal Esophagoscopy: Revisited (over 700 Consecutive Cases)

Gregory N. Postma, MD; Jacob T. Cohen, MD, Peter C. Belafsky, MD, PhD; Stacey L. Halum, MD; Sumeer K. Gupta, MD; Kevin K. Bach, MD; Jamie A. Koufman, MD

Background: **High-resolution transnasal esophagoscopy (TNE) allows comprehensive, in-office examination of the esophagus without sedation.** ***Objective:*** **To compare the authors' present experience using TNE with our initial, previously reported experience.** ***Methodology:*** **Retrospective review of 611 consecutive patients undergoing TNE was compared with 100 consecutive patients previously reported.** ***Results:*** **The most frequent indications for TNE were screening examination of the esophagus in reflux, globus, or dysphagia patients (n = 490), biopsy of a lesion in the laryngopharynx, trachea, or esophagus (n = 42), screening examination of the esophagus in head and neck cancer patients (n = 45), and evaluation for an esophageal foreign body (n = 12). Seventeen procedures were aborted secondary to a tight nasal vault. Significant findings were found in 50% (294/592). The most frequent findings were esophagitis (n = 98), hiatal hernia (n = 47), and Barrett's esophagus (n = 27). These results are similar to those previously reported.** ***Conclusions:*** **TNE is safe, well tolerated by patients, and is easy to learn with a short learning curve. TNE may replace radiographic imaging of the esophagus in otolaryngology patients with reflux, globus, and dysphagia.** ***Key Words:*** **Esophagus, esophagoscopy, reflux, gastroesophageal reflux, laryngopharyngeal reflux, endoscopy, esophageal stricture, hiatal hernia, Barrett's esophagus, foreign body.**

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INTRODUCTION

Since the days of Chevalier Jackson, esophagoscopy has undergone numerous changes. Recently, with the introduction of the thin, high-resolution distal chip camera esophagoscope (VE-1530, Pentax Precision Instrument Corporation, Orangeburg, New York), the esophagoscope can be inserted through the nose in the upright position with topical anesthesia alone without the use of intravenous or per oral medications. This allows the otolaryngologist to perform esophagoscopy as an in-office procedure. In addition, air insufflation, irrigation, and biopsies can be performed. The entire upper aerodigestive tract from the nasal vestibule to the gastroesophageal junction (GEJ) is easily and safely visualized.[1–4]

Transnasal esophagoscopy (TNE) is particularly useful in patients with reflux, swallowing disorders, strictures, and other esophageal and aerodigestive tract pathology.[5–7] The purpose of this article is to report the authors' present experience and to compare it with previously reported past experience (indications, techniques, complications, and results).

TECHNIQUE AND METHODS

Technique

Our technique of TNE involves the patient sitting upright in an examination chair across from the endoscopist. The patient's more patent nasal cavity is first sprayed with 1:1 oxymetazoline 0.05% and lidocaine 4%. In the past, two Tessalon Perles (benzonatate) were given to the patient until they completely dissolved. We realized that this method results in too much topical hypopharyngeal sedation with aspiration of saliva and coughing. Today, one or two sprays of 20% benzocaine (Hurricaine) occasionally are administered to the oropharynx. In cases where biopsy or a longer procedure may be required, one Tessalon Perle is used. The endoscope (VE-1530, Pentax Precision Instrument Corporation, Orangeburg, New York) is lubricated. The endoscope is then passed into the nasal cavity either along the floor of the nose or between the middle and inferior turbinates. Nasopharyngeal closure, tongue base, hypopharynx, vocal fold motion, and possible pooling of oral secretions are observed. The patient's head is then flexed forward toward their chest as the endoscope is passed toward the cricopharyngeus muscle. The patient is asked to swallow, and the instrument is gently advanced. Our standard practice is to advance the instrument into the gastric cardia for a view of the GEJ. With a combination of air insufflation and irrigation, the mucosa of the entire esophagus is examined while the scope is slowly withdrawn. If mucosal lesions or irregularities are noted, biopsy forceps are passed through the working channel and multiple biopsies are obtained.

From the Department of Otolaryngology Head and Neck Surgery (G.N.P., J.T.C., S.L.H., S.K.G., J.A.K.), Center for Voice and Swallowing Disorders of Wake Forest University, Winston-Salem, North Carolina; the Department of Otolaryngology (P.C.B.), UC Davis Medical Center, Sacramento, California; and the Department of Otolaryngology (K.K.B.), Naval Medical Center, San Diego, California, U.S.A.

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Send Correspondence to Dr. Gregory N. Postma, Center for Voice and Swallowing Disorders of Wake Forest University, Department of Otolaryngology, Wake Forest University School of Medicine, Medical Center Boulevard, Winston-Salem, NC 27157–1034, U.S.A. E-mail:gpostma@wfubmc.edu

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TABLE I.
Indications for TNE (N_1 = 100 and N_2 = 611 attempted examinations).

Indication	N_1 (%)	N_2 (%)
Screening examination in patients with reflux/globus/dysphagia	79 (79)	490 (80)
Screening examination in head and neck cancer patients	5 (5)	45 (7)
Biopsy of known lesion in laryngopharynx	8 (8)	42 (7)
Evaluation of possible esophageal foreign body	2 (2)	12 (2)
Tracheoscopy	4 (4)	10 (2)
Dilation of esophageal stricture	1 (1)	6 (1)
Replacement of tracheoesophageal puncture under direct vision	1 (1)	6 (1)

TNE = transnasal esophagoscopy.

Study Methods

Information was gathered retrospectively regarding patient demographics, procedure indications, complications, and findings from charts of the last 611 consecutive patients undergoing TNE at the Center for Voice Disorders of Wake Forest University, and this was compared with previously reported data from the first 100 consecutive patients performed between October 1, 2000 and February 28, 2001.[1] The study proposal was approved by the Wake Forest University Institutional Review Board (BG04 to 250).

RESULTS

Six hundred eleven patients underwent TNE between February 28, 2001 and January 1, 2004. Seventeen procedures were aborted secondary to an inability to pass the endoscope through a tight nasal vault (3%), and two were aborted secondary to self-limited vasovagal responses. The authors' indications for performing TNE with comparison with our previous study[1] are summarized in Table I. Of the 592 completed examinations, significant findings were noted in 50%. Table II summarizes the findings in the present and past study.[1]

Four hundred ninety patients underwent TNE as a screening examination for the evaluation of reflux, globus, or dysphagia. The most common findings in the esophagus were esophagitis, hiatal hernia, and Barrett's metaplasia. All of the Barrett's involved long esophageal segments, and none of the cases of Barrett's metaplasia had progressed to dysplasia. Forty-two patients underwent TNE for biopsy of a suspicious lesion in the laryngopharynx.

Twelve patients underwent TNE for the evaluation of a suspected foreign body. In six cases, a foreign body was found, and in five cases, the foreign body was pushed during the esophagoscopy into the stomach without difficulty. Six laryngectomy patients underwent successful tracheoesophageal puncture in the office under local anesthesia with direct vision using the TNE.

No case of epistaxis requiring packing was reported. One patient had a self-limited vasovagal reaction that required no treatment.

DISCUSSION

TNE is an exciting new technology that allows endoscopic visualization of the aerodigestive tract from the nasal vestibule to the gastric cardia. Our initial experience with the endoscope demonstrates that the examination is easily performed, well tolerated, and safe. That impression did not change in this study. Our indications for performing TNE have not changed either. Reflux, globus, and dysphagia are still the main reason for performing TNE. The high prevalence of esophageal pathologies in this group makes TNE a very important addition to the diagnostic armamentarium.[1–4] It is useful to obtain biopsies of lesions in the laryngopharynx, proximal trachea, and esophagus. In this manner, it can be used to diagnose Barrett's esophagitis and as a screening examination for second primaries in patients with carcinoma of the head and neck. The findings during TNE in the present study are similar to those previously reported. The complication rate is very low, and although the gastroenterologists have reported a high incidence of pain and epistaxis with the transnasal approach,[8–10] in the hands of the otolaryngologist, this is less than 3% and is similar to transnasal fiberoptic laryngoscopy.[1,4]

CONCLUSIONS

TNE is well tolerated by patients with topical anesthesia alone and is an easy-to-learn procedure. TNE may replace radiographic imaging of the esophagus in otolaryngology patients with reflux, globus, and dysphagia.

TABLE II.
TNE Findings (N_1 = 96 and N_2 = 592 completed examinations).

Finding	N_1 (%)	N_2 (%)
Esophagitis	19 (20)	98 (17)
Hiatal hernia	4 (4)	47 (8)
Barrett's metaplasia	6 (6)	27 (5)
Candidiasis	1 (1)	27 (5)
Stricture	4 (4)	24 (4)
Carcinoma	5 (5)	22 (4)
Abnormal motility	3 (3)	17 (3)
Esophageal polyp	1 (1)	13 (2)
Patulous gastroesophageal junction	3 (3)	8 (1)
Esophageal diverticulum	2 (2)	3 (1)
Esophageal web	3 (3)	2 (1)
Foreign body	1 (1)	6 (1)
Tracheoesophageal fistula	2 (2)	0 (0)

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