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SELECT

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Vital Topic

Laryngopharyngeal Reflux and the Role of Transnasal Esophagoscopy

LPR patients have an incidence of esophageal pathology, and this is the primary reason why otolaryngologists and rhinologists should recommend and perform TNE in patients

Guest Presentation by Michael Setzen, MD

A significant proportion of patients consulting with a rhinologist for postnasal drip have reflux. For this reason, it is important for the rhinologist to be aware of reflux and to consider incorporating transnasal esophagoscopy into their armamentarium. Not all reflux is created equal. GERD is not LPR. Most otolaryngologists today are aware of the difference between GERD and LPR, but gastroenterologists, primary care physicians, internists, and most medical specialists are unaware of LPR and the symptoms of LPR.

The symptoms of LPR are primarily dysphagia, dysphonia, globus sensation, chronic sore throat, extensive throat clearing, chronic cough, and hoarseness. This is due to pharynx sensitivity to reflux injury as it has GERD protective capability. On the other hand, patients with GERD are often obese, overweight, and complain of heartburn and esophagitis in the supine position especially at night when lying in bed. GERD patients usually have no LPR symptoms, namely no cough, voice change, hoarseness, sensation of foreign body in the throat, or excess throat clearing. The LPR patient often has upright daytime symptoms. The LPR patient usually does not have heartburn, and esophagitis is uncommon. They do have extraesophageal symptoms as discussed earlier.

LPR is related to some GI disorders, in particular, adenocarcinoma of the esophagus and Barrett's esophagitis. There has been a high incidence of adenocarcinoma in patients with LPR, in particular in those patients with chronic cough as was noted in a paper in the June 2004 *Annals of Surgery*. Once again, it is important to keep in mind that these LPR patients have an incidence of esophageal pathology, and this is the primary reason why otolaryngologists and rhinologists should recommend and perform TNE in patients.

The findings of LPR are well known to the otolaryngologist. These include the following: subglottic edema, ventricular obliteration, erythema and hyperemia of the posterior larynx, vocal cord edema, diffuse laryngeal edema, posterior commissure hypertrophy, granuloma or granulation of the posterior larynx, and thick endolaryngeal mucous. The treatment of LPR is well known to the otolaryngologist but not well known to many other specialists, even GI specialists. Recommended therapy includes a course of proton pump inhibitors and a change in diet and lifestyle. It is poor diet that tends to result in LPR.

Proton pump inhibitors, or PPIs, are necessary not only once a day but in many situations twice a day. This is indeed a difficult concept to convince both our

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Educational Objectives: This activity is designed to provide the participant with a regular overview of the most current, clinically useful information available in the monthly journal literature covering strategies and advances in the diagnosis and treatment of ear, nose and throat disorders and head and neck surgical diseases.

Controversies, advantages and disadvantages of diagnosis and treatment plans are emphasized.

After completing each issue's activity, the participant is expected to have a working familiarity with the most clinically important information and perspectives presented.

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patients and our GI and medical colleagues. Treatment is usually from three to six months and mostly six months. Many patients are concerned that this may be a lifetime commitment. Generally, this is not so but may be so in the obese or non-compliant patient. Some patients in spite of twice a day treatment with a PPI can have nocturnal breakthrough. Maybe they complain of symptoms on going to bed at night, and in these patients it is recommended that an H2 antagonist be given at bedtime. Recommended changes in diet and lifestyle must be stressed again.

It is important that a lengthy discussion be carried out with the patient with respect to the dosing of the PPI medication and that this must be given at least one-half hour to one hour before breakfast in the morning and if given twice a day, one-half hour to one hour before dinner at night for the drug to be effective. If the drug is only to be given once a day, then generally it should be given as a morning dose prior to breakfast. One should see the patient at least six to eight weeks after commencing therapy then again at 12 weeks and again in six months. If one sees improvement in both symptoms and on examination, one can taper the drug twice a day to once a day over a period of days and then to alternate day therapy over another period of days and then finally stop the medication. If the patient has a recurrence of symptoms and/or signs, then medication, diet, and lifestyle change may become permanent.

In a well-written consensus and statement by the American Academy of Otolaryngology Head and Neck Surgery in the July 2002 supplement, PPI therapy for LPR should be at least once a day and generally twice a day for three to six months. It is important that this consensus statement be made available to insurance companies when they deny therapy, especially bid therapy.

TNE is important because acid reflux can cause pathology in the esophagus. You must explain to patients the importance of TNE and the fact that acid in the stomach passes up into the esophagus causing changes in the larynx resulting in the symptoms for which the patient has come to see the otolaryngologist. It is important to draw to the attention of the patient that this very acid can be irritating to both the larynx and esophagus, and it may be causing esophagitis, esophageal ulceration,

Barrett's esophagitis, and even adenocarcinoma. It is for this reason that TNE is recommended in patients with LPR and GERD. A similar explanation to our medical colleagues is equally important explaining to them that LPR may be indicative of early problems in the distal esophagus.

Only otolaryngologists can do the TNE. Our GI colleagues are reluctant to pass a scope through the nose, and furthermore, their esophagus scopes and gastroscopes are too large to be passed through the transnasal route. Our scope is only 5.1 mm in diameter and can be easily passed through the nose once we have vasoconstricted the nasal mucus membranes and anesthetized the nose and oral cavity.

From a historical standpoint, Einhorn in 1897 was the first American to do esophagoscopy. Chevalier Jackson was the first to perform foreign body removal from the esophagus in 1905. Hirschowitz first introduced the flexible fiberoptic scope in 1957. Shaker, a gastroenterologist, was the first to do esophagogastroduodenoscopy in 1994. In 1998, Jonathan Aviv was the first otolaryngologist to present 20 cases in a live demonstration of TNE and later published this in an article in 2001 in *Otolaryngology-Head and Neck Surgery*. Belafsky, Postma, Daniel, and Kaufman published a series of 100 cases undergoing TNE in *Otolaryngology-Head and Neck Surgery* in the December 2001 issue. In 2002, Saeian wrote that TNE is as accurate as conventional upper endoscopy in the detection of Barrett's esophagitis. Wildi, in 2004, was of the opinion that reflux patients, in particular those with heartburn, regurgitation, and dysphagia but without GI symptoms of abdominal pain, nausea, and ulcer were highly unlikely to have major GI pathology, and therefore were suitable candidates for TNE alone.

It is important to realize that LPR and GERD occur together with Barrett's esophagitis and adenocarcinoma of the esophagus. Winkelstein, in 1935, was the first to write about esophagitis. Barrett, in 1950, discussed columnar lined esophagus with peptic ulcer. Allison and Johnstone in 1953 discussed GERD linked to Barrett's esophagitis. Naef in 1975 discussed Barrett's esophagitis and esophageal adenocarcinoma. The most important landmark paper of recent was that by Reavis in the article in the *Annals of Surgery*, June 2004, in which he linked LPR symptoms and showed that there was a better prediction of the presence of esophageal adenocarcinoma in patients with LPR than those with typical GERD symptoms, in particular if cough was a symptom. It is for this reason again that we stress the importance of TNE to our patients, especially those that have symptoms of LPR. Once again, esophagoscopy is recommended whether it be by the GI doctor or the otolaryngologist, but preferably TNE by the otolaryngologist.

The technique is rather simple. Keep the patient NPO for a minimum of three to four hours. The patient sits in a standard ENT examining chair. Anesthetize the nose and oral cavity topically with 4% Xylocaine. The anesthetic spray is copiously sprayed in both nostrils and the oral cavity. The patient is asked to swish and swirl the Xylocaine in the oral cavity and then swallow the Xylocaine. One percent Neo-Synephrine as a vasoconstrictor is sprayed topically in both nostrils prior to topical anesthesia. Following this, the scope is passed transnasally along the floor of the nose preferably on the left side of the nose unless there is a deviated septum on that side. Occasionally a lubricant or defogging agent is used to assist in the passage. The scope enters the left pyriform sinus, and then the patient leans forward as if looking over a fence. At this point, the scope is advanced into the cricopharyngeus as the patient is asked to swallow. This relaxes the cricopharyngeal muscle and allows the scope to easily enter the esophagus. Periodically, the patient can swallow or air can be insufflated into the esophagus through the esophagoscope. The esophagus is collapsed at rest, so air insufflation dilates the esophagus and allows for better visualization. A thorough examination of the larynx, esophagus, and stomach is carried out, especially the gastroesophageal junction. A brush biopsy is always done once the examination is complete. The brush biopsy is performed to document and confirm the presence or absence of Barrett's esophagitis with or without dysplasia. Evaluation of the stomach is done at the discretion of the examining otolaryngologist, including retrograde flexion of the scope looking at the cardia of the stomach or the undersurface of the stomach.

TNE is safe, and it is an office-based procedure. There are no scheduling delays. If you see a patient today with LPR, you can do a TNE procedure tomorrow. With GI doctors it can take weeks or months to schedule an upper endoscopy. There is no work time lost for the patient. In fact, one tells the patient you can drive in and drive out, and you do not even need anybody to accompany you unlike conscious sedation of upper endoscopy. Furthermore, conscious sedation has certain inherent risks as it is an anesthetic. The need for esophagram has been reduced by TNE except in the case of Zenker's Diverticulum.

As otolaryngologists we will help improve the survival of adenocarcinoma with this procedure because we will be looking for Barrett's esophagitis and adenocarcinoma in our patients with LPR. TNE is cost effective because one does not need an anesthesiologist, a hospital, an operating room, or an ambulatory facility. One just needs the confines of an ENT office.

The indications for TNE include dysphagia, reflux be it LPR or GERD, an abnormal esophagram, any head and neck neoplasms, or any concern about an esophageal neoplasm. Esophagoscopy will improve the survival of esophageal adenocarcinoma for the following reasons: it is the fastest growing cancer in the U.S. and Western Europe. It is usually detected in an advanced stage. Five-year survival rates currently are less than 10% unless detected earlier. Risk factors for adenocarcinoma include both Barrett's esophagitis and GERD or LPR. In the U.S., GERD affects 20% of the population which is about 50 million people. Endoscopic surveillance is recommended for early detection of cancer in patients with Barrett's. Complications of esophagoscopy are related to IV sedation while complications of TNE are minimal, if any, and at the most an occasional nose bleed or inability to pass the scope in the case of a badly twisted septum and some discomfort usually slightly more than flexible laryngoscopy.

TNE can be performed with either a sheathed scope using a slide on sheath or a video chip esophagoscope without a sheath. The video chip esophagoscope, made by either Pentax or Olympus, has a built-in biopsy channel, an air insufflation channel, a suction channel, and it has a rotating wheel that allows you to manipulate the scope. The rotating wheel can be held in the right hand like a fishing pole and the scope held in place with the left hand guiding the tip of the scope into the nose. A regular biopsy or brush biopsy forceps can be passed through the scope. Video chip esophagoscopy is new to the otolaryngologist and does need some training and expertise. On the average, about 10 TNE procedures with this technology and even the slide on sheath endoscope are necessary before one can become proficient at TNE.

The sheath scope made by Vision Sciences allows one to utilize a specialized sheath which slips on the esophagoscope. It has two channels within the sheath, namely a suction port and an air insufflation port. The advantages of a sheath system is that there is less cost involved because less personnel are necessary, there is strict infection control, and there is no turn around time between procedures because sterilization is not necessary. A brush biopsy or forceps can be passed through the sheath.

The advantages of the video chip scope are that the clarity of the image is excellent, and suction and air insufflation are also far better. One does need to sterilize the video chip system for a minimum of 20 minutes between cases. With this in mind, both systems offer different advantages.

The brush biopsy is usually done following the endoscopic evaluation of the larynx, esophagus, and stomach. Any suspicious areas are brushed, but in particular it is recommended that the Z

line always be brushed whether or not one sees evidence of Barrett's esophagitis or ulceration. One of the biggest problems our GI colleagues have with respect to Barrett's is that there can be a sampling error. They have missed areas of Barrett's esophagitis that were not biopsied. With the brush technique, one brushes up and down the entire Z line whether it appears normal or abnormal, and in so doing, one is hoping not to miss any areas of Barrett's esophagitis. When brushing, you must abrade the epithelium to cause micro bleeding as this yields a pathology specimen rather than cytology. We utilize the services of CDX Laboratories based in Suffern, New York. This lab does a computer-assisted analysis of the brush biopsy specimen where a computer scans thousands of cells and presents the most suspicious 200 cells to the pathologist.

CPT codes used for TNE include 43200, which is esophagoscopy, rigid or flexible and CPT code 43202, which is esophagoscopy, rigid or flexible with biopsy. Medicare reimbursement is higher when done in the office as opposed to being done in a facility. ICD-9 codes used include dysphagia, ICD-9 number 787.2, reflux esophagitis, 530.11, hiatal hernia, 533.3, aspiration, 933.1, Barrett's esophagitis 530.2, esophageal stricture, 530.3, and Zenker's Diverticulum 530.6. Accurate and complete documentation is important. One must always show medical necessity.

Documentation is important for appropriate reimbursement. When documenting, one must comment on the type of anesthesia used, namely local, the approach used, namely transnasal, and why the TNE was performed. For example, the patient had laryngopharyngeal reflux with fear of Barrett's esophagitis, esophageal ulceration, or possibly even esophageal malignancy. Following this, one must comment on all findings. These include the larynx and the presence of any laryngopharyngeal reflux noted in the larynx. One must document the findings in the entire esophagus, upper, middle, and lower third. If one evaluates the stomach, then comment on the findings in the stomach as well. A thorough evaluation of the GE junction is critical with a comment on the findings thereof. Furthermore, one should comment on whether or not a hiatal hernia is present. If a biopsy is performed, one must note whether or not it was a brush biopsy or a regular biopsy. Any complications must be noted.

As we look ahead, most esophagoscopies will be performed in the U.S. by otolaryngologists in an office setting without sedation. Esophagoscopy will become safer. Esophageal cancer survival should improve since TNE procedures will be done readily in the office. Scopes will become smaller, and hopefully Barrett's esophagitis and esophageal adenocarcinoma will be found at earlier stage.