Transnasal Esophagoscopy (TNE) in the Staging of Head and Neck Cancers: Feasibility and Impact in a Public Hospital Setting

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Abstract:
Objective: To evaluate the feasibility and impact of an in-office transnasal esophagoscopy (TNE) for staging of head and neck cancer in a public hospital setting. Study Design: Retrospective. Methods: Patients who underwent an in-office TNE for evaluation of head and neck cancer (HNC) at a tertiary care medical center were identified. The TNE endoscope was used to perform an in-office esophagoscopy and bronchoscopy under local anesthesia in unsedated patients. Clinical, demographic, procedure related data was recorded. Results: The average age was 58.5 years old (range, 41-74), with 100% of them being male. Primary site was the oropharynx (3/7), oral cavity (2/7), larynx (1/7), and unknown primary (1/7). T-stage distribution was T4 (1/7), T3 (3/7), T2 (2/7), and Tx (1/7). Most common presenting symptoms included an oral lesion (42%), dysphagia (28.5%), and neck mass (28.5%). 86% (6/7) received an appropriate pathological diagnosis (squamous cell carcinoma) and complete staging in the operating room in all patients. However a formal cost effective analysis is warranted to further evaluate this hypothesis.

Methods: Procedure: All procedures were performed in a sitting position. Procedure involved the use of a flexible 5.3mm TNE endoscope (Olympus PEF-V, Olympus Corporation of the Americas, Center Valley, PA). Oxymetazoline hydrochloride (Neosynephrine) and Pontocaine (Tetracaine) were sprayed into the most patent nare. In addition, patients were further anesthetized with lidocaine jelly. A total of 4 L of 4% Lidocaine was injected via the interventional channel onto the epiglottis, true vocal cords, and the piriform sinus. Bronchoscopy was performed prior to esophagoscopy. Esophagoscopy included evaluation of the esophageal lumen up to the lower esophageal sphincter. A complete bronchoscopy was performed when feasible but a minimum evaluation included assessment of the main bronchi and openings of the secondary bronchi.

Results: In our series, the average age was 58.5 years old (range, 41-74), with 100% of them being male. Primary site was the oropharynx (3/7), oral cavity (2/7), larynx (1/7), and unknown primary (1/7). T-stage distribution was T4 (1/7), T3 (3/7), T2 (2/7), and Tx (1/7). Most common presenting symptoms included an oral lesion (42%), dysphagia (28.5%), and neck mass (28.5%). 86% (6/7) received an appropriate pathological diagnosis (squamous cell carcinoma) and complete staging with TNE and assisted biopsies of the primary lesion when indicated. One patient with a negative biopsy underwent a formal endoscopy and biopsy to complete pre-treatment cancer staging 14% (1/7). There were no major complications. In 6 patients where biopsy confirmed malignancy, pre-treatment planning could be completed with appropriate imaging studies and without the need for a formal panendoscopy in the operating room under general anesthesia. Conclusion: TNE is safe, effective, and feasible for head and neck cancer staging. In-office TNE assisted cancer staging allows efficient work-up and management of HNC patients in a public hospital setting.

Discussion:
Post-hurricane Katrina, MCLNO and LSUHSC did not have formal otolaryngology services in New Orleans until 2008-2009. The LSU Department of Otolaryngology re-instated the otolaryngology clinic in January 2009. In the setting of a new service and a public hospital environment, we hoped to facilitate and expedite the care of our head and neck cancer patients. Many studies validated the utility of TNE procedure for rehabilitation, diagnosis and evaluation of various conditions of the upper aerodigestive tract including dysphagia and second primary tumors of esophagus in patients with head and neck cancer. However, few studies have evaluated the feasibility and impact of this diagnostic and therapeutic tool on cancer staging.

In our preliminary experience, we found TNE assisted cancer staging in selected candidates to be a safe and efficient mechanism of obtaining pathological tissue for diagnosis and evaluation of the upper aerodigestive tract. In our series, 86% could avoid a trip to the operating room for a formal panendoscopy. This offers an advantage to the patient in terms of facilitating diagnosis and treatment planning.

From a logistics perspective, an in-office, single-visit cancer staging eliminates the need for an operative panendoscopy and permits optimal utilization of elective operating room time in a public hospital setting. We hypothesize that TNE also permits a more cost-effective option for initial cancer evaluation in selected patients compared to the traditional algorithm of clinic evaluation followed by a panendoscopy and biopsy in the operative room in all patients. However a formal cost effective analysis is warranted to further evaluate this hypothesis.

Conclusions: TNE is a safe, effective, and feasible for head and neck cancer staging. In-office TNE assisted cancer staging allows efficient work-up and management of HNC patients in a public hospital setting.