**INTRODUCTION**

Dysphonia is prevalent within the general population, with lifetime and point prevalence of 29.9% and 6.6% respectively. The prevalence of dysphonia has been proposed, and much is known about the medical and surgical care for each of the different causes of dysphonia. Despite the prevalence of dysphonia and the knowledge about each individual laryngeal pathophysiology, few studies have compared one etiology of dysphonia to another. Previous studies to categorize the variety of laryngeal pathologies among patients with dysphonia have focused mainly upon demographic factors such as age, gender, and occupation. However, none has statistically compared these demographics across each diagnosis, and none has examined other associated head and neck complaints or voice-related quality of life as they relate to the variety dysphonia etiologies.

The goal of this study is to more fully characterize the spectrum of dysphonia and to statistically compare the diagnostic categories to one another. Beyond demographics, this study aims to identify associations between dysphonia and other head and neck complaints and also to study the impact that factors such as diagnosis and demographics have upon voice-related quality of life.

**METHODS AND MATERIALS**

- Prospective cohort study; all new patients with chief complaint of dysphonia from May 2007 – April 2009 were included.
- Participants completed a survey which included demographic information, associated complaints, and the Voice Related Quality of Life questionnaire (VRQOL).
- On the basis of history, exam and stroboscopy, diagnosis for each patient’s dysphonia was obtained. Diagnoses were grouped into one of eight categories: 1. Inflammatory 2. Paralysis 3. Functional 4. Post-traumatic 5. Other neurologic 6. Neoplasm 7. Stenosis/other 8. Phonotrauma
- Diagnoses were then compared to one another. Differences in demographics, clinical characteristics and VRQOL were analyzed with one-way ANOVA.
- Multivariate regression identified those factors most predictive of overall VRQOL.

**RESULTS**

Five-hundred and fifty-one patients were evaluated (age range 11-96 years, 61.8% female/38.2% male). The distribution of diagnostic categories is shown in Figure 1. "Inflammatory" includes patients with reflux laryngitis, infectious laryngitis, and laryngitis sicca. "Paralysis" also includes vocal fold paresis and patients with both unilateral and bilateral impairment. In addition to nodules, polyps, and cysts, "phonotraumatic" includes vascular malformations and vocal process granuloma. "Functional" is almost entirely muscle tension dysphonia patients, but also includes patients with conversion disorder. Patients with supraglottic hyperfunction thought secondary to another diagnosis were coded according to primary diagnosis; however, an additional 62 patients (11.2% of the study population) were noted to have secondary supraglottic hyperfunction. "Post-traumatic" includes vocal fold scarring subsequent to prior surgery, intubation, or external trauma, and also includes patients with diminished vibration secondary to accumulative age – presbylaryngis patients were placed into this category. "Other neurologic" contains vocal tremor, spasmodic dysphonia, and Parkinson’s hypophonia.

Relative to VRQOL scores (Figure 2), the “high-scoring” Inflammatory, Post-traumatic, Neoplastic, and Phonotraumatic groups all scored between 70-74, while the “lower-scoring” Functional, Other Neurologic, Paralysis, or Stenosis/Other groups all scored between 45-56. Among all groups, differences in VRQOL are statistically significant (ANOVA, p<0.001). Comparing single categories against one another reveals no significant differences among any of the “high-scoring” groups or among any of the “lower-scoring” groups. Comparisons between the “high-scoring” group and the “lower-scoring” group reveal significant differences between each of the 4 “high-scoring” categories and the paralysis group, between Inflammatory and both Functional and Other Neurologic, and between Phonotraumatic group and Functional and Other Neurologic (p<0.05 for each of these comparisons, Bonferroni analysis). Multivariate analysis looked at those factors which were most predictive of an individual’s VRQOL score. Age, gender, and smoking were not predictive of individual VRQOL: diagnosis of Paralysis or Stenosis/Other were statistically predictive of low VRQOL (p=0.018 and 0.043 respectively).

**DISCUSSION**

Previous studies which categorized the variety of laryngeal pathologies among dysphonia patients focused upon demographic factors such as age, gender, and occupation. The female/male breakdown of 61.8%/38.2% reported here is similar to that of these other studies. Both Coye et al. and Houtte et al. found a higher proportion of neoplastic disease among men, similar to this study, though neither analyzed this ratio statistically as compared to non-neoplastic etiologies.

To the authors’ knowledge, this is the first study to analyze gender statistically among different causes of dysphonia. Similarly, this appears to be the first study to analyze associated conditions such as odynophonia, dysphagia, odynophagia, otalgia, and smoking as they relate to various diagnoses for dysphonia, and the first to compare VRQOL statistically across these categories.

**CONCLUSIONS**

To the authors’ knowledge, this is one of the few studies which categorizes the various pathophysiologies which comprise the spectrum of dysphonia, and is the first to compare these categories to one another statistically. On a comparative basis, different diagnoses are associated with different gender breakdown, smoking history, associated head and neck complaints, and voice-related quality of life. Understanding these differences can help to better care for patients with voice complaints.