

Does Even Low-Grade Dysphonia Warrant Voice Center Referral?

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Summary: Objective. Data regarding the referral of dysphonic patients to specialty voice clinics are limited. The objective of this study is to examine the relationship between low perceptual dysphonia severity and subtle laryngeal findings to discern if this can help guide referral.

Study Design. This is a retrospective chart review.

Methods. The charts of 94 patients presenting with a primary complaint of hoarseness to a single laryngologist over a 1-year period at a tertiary care, interdisciplinary voice center were analyzed. Patients were stratified by clinician perceptual rating of dysphonia severity using the overall Grade score from the GRBAS (grade, roughness, breathiness, asthenia, strain) scale, and this was compared to their laryngeal findings on stroboscopy.

Results. Forty-one patients had a Grade score of 0 or 1, of whom 85% had relatively subtle findings on stroboscopy, including vocal fold paresis, muscle tension dysphonia, and spasmodic dysphonia.

Conclusion. Patients with a primary complaint of hoarseness but absent or only mild perceptual dysphonia may have subtle or occult laryngeal findings that may be easily missed. These patients may benefit from early referral to a specialty voice center.

Key Words: Dysphonia–Hoarseness–Stroboscopy–Perceptual voice evaluation–GRBAS.

INTRODUCTION

Dysphonia is a disorder that is both prevalent and complicated. It is cited as affecting up to a third of the general, adult population in the United States at some point during their lifetime, and it is a frequent condition leading to evaluation in an otolaryngology practice.^{1,2} Dysphonia may be benign and short-lived, or it may be an indication of a more serious underlying pathology. It is already well established that disorders of the voice can cause significant reduction in a patient's quality of life; therefore, establishing an accurate underlying diagnosis is critical in determining appropriate treatment.²

Delayed diagnosis as to the cause of dysphonia has the potential for inappropriate patient management, progression of symptoms and/or disease, and patient dissatisfaction. Unfortunately, data regarding the referral of dysphonic patients to specialty voice clinics are limited and not yet well established. The aim of this study is to further facilitate identification of patients who may benefit from referral to a multidisciplinary voice center for evaluation of their dysphonia by investigating the relationship between perceptual dysphonia and laryngeal findings.

MATERIALS AND METHODS

A retrospective review utilizing an outpatient electronic health record system (EPIC 2014, Verona, WI) was performed for all new, adult patients seen at a tertiary care voice center with a chief

complaint of hoarseness from January to December 2015. Institutional review board approval from Temple University was obtained for this study. Voice Center evaluation included a comprehensive history, physical examination, acoustic-perceptual and functional assessments of voice production, and laryngoscopy with stroboscopy performed by a fellowship-trained laryngologist in conjunction with a certified speech-language pathologist (SLP) who specializes in voice. Patients younger than 18 years of age, and those with a documented diagnosis of acute laryngitis, presbylaryngis, conversion dysphonia, or nonspecific/unclear etiology based on chart review, were excluded from our analysis.

The following data points were recorded: demographic data (age, gender, degree of voice use), Voice Handicap Index-10 (VHI-10) score, the "Grade" score from the Grade, Roughness, Breathiness, Asthenia, Strain (GRBAS) perceptual evaluation scale, and documented voice diagnosis. The GRBAS scale has been shown to be one of the more relevant perceptual voice-quality rating scales, with low intrarater and interrater variability.³ The "Grade" score from the GRBAS evaluation was chosen as a representative number in this study, as it encompasses the clinician's overall rating of the patient's dysphonia. This score was determined by the SLP while listening to the patient during a reading of the Rainbow Passage. The perceptual dysphonia score was documented as 0, 1, 2, or 3, where 0 indicates absent, 1 is mild, 2 is moderate, and 3 is severe perceptual dysphonia.

Final diagnoses believed to be the underlying cause of the dysphonia fell into one of six categories: (1) vocal fold paresis; (2) vocal fold paralysis; (3) benign vocal fold lesions (including structural lesions such as polyps, nodules, sulcus vocalis, granulomas, and papillomas); (4) biopsy-proven malignant vocal fold lesions (including premalignant dysplastic lesions); (5) laryngopharyngeal reflux (LPR); and (6) hyperfunctional disorders (including spasmodic dysphonia [SD] and muscle tension dysphonia [MTD]). We attempted to minimize the effect of the lack of uniform diagnostic terminology by creating these broad, inclusive diagnostic categories. Statistical analysis to compare the diagnosis categories was performed using analysis of variance

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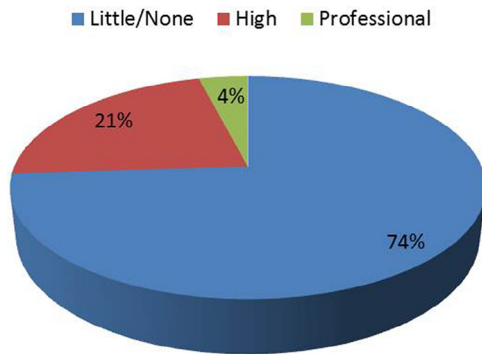


FIGURE 1. Occupational voice demand.

with *post hoc* Bonferroni *t* tests. In cases where multiple voice diagnoses were listed in the medical record, the primary diagnosis was used for purposes of statistical comparison.

In addition, patients were asked about daily voice use and were recorded as having “little to no occupational need,” “high occupational need” (ie, teachers), or “professional voice user” (ie, actors, singers). All three categories of voice use were represented in this series of patients (Figure 1). Our main outcome of interest in this study was to identify how perceptual evaluation correlated to laryngeal findings, and whether or not this could guide a clinician’s referral of dysphonic patients to a multidisciplinary voice center.

RESULTS

One hundred and six patients were identified, 94 of whom were included in this series on the basis of our inclusion and exclusion criteria. Forty-seven patients were men, and 47 were women. The average age of all patients was 60 years, with a range of 31 to 88 years.

When diagnoses were stratified by their perceptual Grade score from the GRBAS scale, patients with absent or mild perceptual dysphonia (meaning a Grade score of 0 or 1, respectively) were found to have less obvious laryngeal diagnoses (Figure 2). More specifically, 41 patients had a perceptual dysphonia Grade score of 0 or 1, of whom 85% had subtle laryngeal findings on stroboscopy: vocal fold paresis, LPR, SD, and MTD. Patients with moderate or severe perceptual dysphonia (meaning a Grade score of 2 or 3, respectively) tended to have more distinct structural or motion pathology on stroboscopic evaluation. Fifty-three patients had a Grade score of 2 or 3, of whom 70% had more obvious abnormalities upon laryngeal stroboscopic evaluation: benign or malignant laryngeal mass lesions and vocal fold paralysis.

Further analysis demonstrated that there were no significant demographic differences among the patients represented within each of the six broad diagnosis groups. The diagnosis categories of vocal fold paresis, LPR, and hyperfunctional disorders, where most patients had Grade scores of 0 and 1, were not statistically significantly different from a demographic standpoint from one another ($P = 0.22$). In addition, the diagnosis categories of vocal fold paralysis, benign lesions, and malignant lesions, where the majority of patients had Grade scores of 2 and 3, were not statistically significantly different demographically from one another ($P = 0.92$).

When further examining our data, we noted that 38 patients in our series (41%) had previously undergone flexible fiberoptic laryngoscopy by an outside otolaryngologist with an initial voice diagnosis documented in their medical record. When comparing the initial voice diagnoses to ALL final diagnoses (ie, inclusive of all final diagnoses when multiple voice diagnoses were made), we found that 15 patients (40%) had the same diagnosis as the voice center team, 13 (34%) had a different diagnosis, and 10

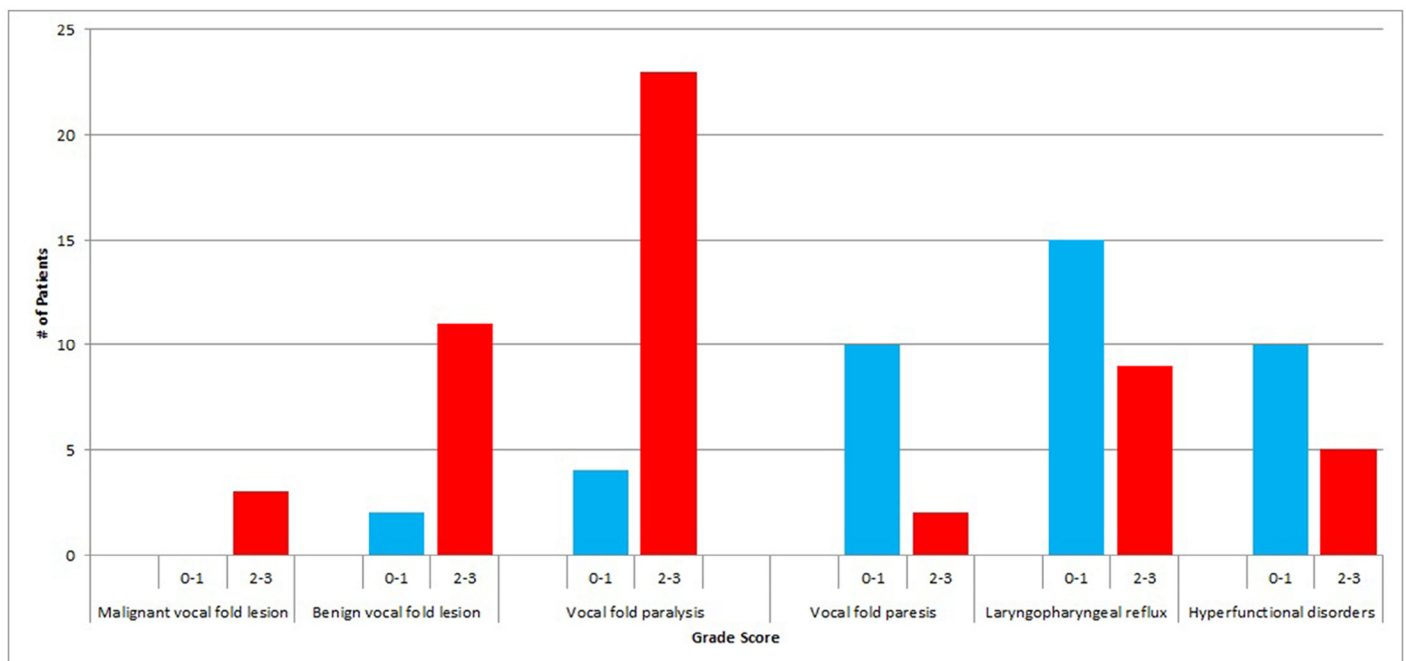


FIGURE 2. Diagnosis and grade score.

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