Introduction

There is no clear evidence to establish an association between hearing loss and dysphonia. However, previous studies have established that both hearing loss and dysphonia are associated with a decreased quality of life (QOL). There is also evidence to suggest that depression scores are higher in patients that have both hearing loss and dysphonia1.

There is subjective data to support a co‐prevalence of hearing loss and dysphonia in an elderly population2. There are also small studies based on objective data associating hearing loss with abnormal parameters in voice production3. Of note, both hearing loss and dysphonia are identified at increased rates in elderly populations.

Our aim is to identify the prevalence of dysphonia in a population with hearing loss.

Methods

Patients presenting to Georgia Health Sciences University with hearing loss from March 2007 to present were included in the study. Demographic data regarding age and gender was collected.

All patients underwent formal audiologic testing. This included testing of air and bone conduction at standard frequencies, determination of pure tone average (PTA), speech reception threshold (SRT) and word recognition percentage.

All patients within the study completed the Voice Handicap Index - 10 (VHI-10) survey. The VHI-10 is a validated instrument that is self-administered and provides a measure for patients with voice disorders4.

Unilateral hearing loss was defined by three categories based on speech reception threshold (SRT): mild (SRT 25‐44), moderate (SRT 45‐69) and severe (SRT >70). Bilateral hearing loss was defined likewise based on the average SRT. SSPS 11.0 software was then used to interrogate all gathered data.

Results

Figure 1: Distribution of age. A total of 53 patients were included. Average age was 49.6 +/- 16.1 yrs. 35 patients were female (66%) and 18 were male (34%).

Figure 2: Distribution of hearing loss based on average SRT among included patients.

Figure 3: There is no statistical difference in VHI scores between different categories of patients with unilateral hearing loss.

Figure 4: There is no statistical difference in VHI scores between different categories of patients with bilateral hearing loss. There is a trend toward increased VHI in patients with a moderate hearing loss.

Conclusion

There are both theories and objective data that support correlation between hearing loss and dysphonia. However, there continues to be a lack of definitive association. We found no statistically significant association of dysphonia and hearing loss in this study. Of note, our data suggests a trend of increased VHI in patients with moderate hearing loss. This is interesting in that the VHI-10 is a subjective assessment tool based on patient perception of voice.

Conclusive studies involving objective data are warranted, but are difficult and costly to attain as they require both formal audiologic testing and extensive physiologic speech evaluation. Clear identification of patients at risk for co-prevalence of dysphonia and hearing loss may lead to improved intervention with both hearing amplification and speech therapy. This is important as treatment of hearing loss and dysphonia are individually associated with increased QOL1,2.

References


