

Hemilaryngeal Microsomia: An Anatomic Variant

*Matthew J. Urban, *Jillian Mattioni, *Aaron Jaworek, †Valeria Potigailo, and ‡Robert T. Sataloff, *†‡Philadelphia, Pennsylvania

Summary: Objectives. This study aims to describe a congenital laryngeal structural variant, hemilaryngeal microsomia (HLM), and to correlate identification on physical examination with computerized tomography scan (CT) and laryngoscopy findings.

Methods. The study was conducted at a tertiary care center. Six patients presenting with hoarseness were admitted to a tertiary care otolaryngology office. These patients had asymmetrical thyroid cartilage prominence on palpation during physical examination. A diagnosis of HLM was made. All patients underwent laryngostroboscopy and CT scan. Four control patients with normal thyroid cartilage anatomy on physical examination, CT, and stroboscopy results were included for comparison.

Results. Disparities in thyroid cartilage angles correlated with documented physical examination findings for six out of six HLM patients. On CT scan, the average difference in left and right thyroid laminar angles was $30.2^\circ \pm 18.3^\circ$ in HLM patients vs $4.00^\circ \pm 1.63^\circ$ in control patients ($P = 0.023$). Stroboscopic findings also correlated with HLM. The arytenoid cartilage was anteriorly or medially displaced on the microsomic side in all six HLM patients. Three patients had anterior placement of the vocal process resulting in shortening of the vocal fold on the microsomic side of the larynx.

Conclusions. HLM is a congenital structural anomaly of the larynx that may be palpated on physical examination. HLM found on physical examination can be correlated with asymmetries found on CT scan and endoscopy. There is no evidence that the structural features of HLM were causally related to voice symptoms, but the findings on HLM may lead to misdiagnosis. A larger study is indicated to confirm laryngeal structural differences between patients with HLM on physical examination and the general population. Whether or not HLM affects clinical or surgical outcomes remains to be studied.

Key Words: Hoarseness–Dysphonia–Thyroid cartilage–Laryngostroboscopy–Computerized tomography.

INTRODUCTION

Dysphonia is one of the most common presentations to an otolaryngologist. Nearly one in three individuals experiences a voice disorder during his or her lifetime with higher rates in women, the elderly, and professional voice users such as teachers, singers, and salespeople.^{1–3} This paper highlights an anatomic variant that may confound the otolaryngologist's evaluation of dysphonic patients.

HEMILARYNGEAL MICROSOMIA (HLM)

The thyroid cartilage is composed of two laminae, which meet at a 90° – 120° angle. The thyroid laminae are typically fairly symmetrical and surround the vocal folds (VFs). The VFs attach to the posterior midline of the thyroid cartilage and to the arytenoid cartilage at the vocal process.

This paper describes an anatomic variation that we have termed HLM. HLM is a congenital laryngeal asymmetry of the thyroid laminae. On examination, the thyroid cartilage is palpated as less prominent on the involved side. HLM is associated with asymmetric internal laryngeal configuration, which may mimic laryngeal pathology such as arytenoid dislocation, VF paresis,

or VF process avulsion when visualized during stroboscopy. Because normal laryngeal mechanics presumes symmetrical cartilages, it is possible that HLM may alter mechanics and thus eventually result in pathology. In the following reviewed patients, HLM was not considered the cause of dysphonia. The HLMs documented in the present study are not of consistent size, orientation, or position, but were all palpated on physical examination by the senior author (RTS).

METHODS

This retrospective study was approved by the Institutional Review Board at Drexel University College of Medicine. Adult patients from our practice with HLM palpated on physical examination underwent stroboscoped laryngoscopy (SVL) and computerized tomography (CT) of the neck as clinically indicated. Patients were excluded from the present study if they had undergone laryngeal framework surgery before CT imaging or if they had a history of laryngeal trauma. Nine patients met inclusion criteria for the HLM group, but one was excluded because of framework surgery performed elsewhere before the CT, and two were excluded due to a history of laryngeal trauma. The HLMs were identified over 2 years, but four out of nine HLM patients presented to the practice within a 6-week period. Four controls who had symmetric thyroid cartilage to palpation and had undergone a CT scan during their evaluations were selected from patients at our practice. Overall, CT scans were completed between 2010 and 2016. All patients presented to the otolaryngologist for recent onset of voice complaints including hoarseness, vocal strain, fatigue, and decreased projection. Patients were evaluated initially via thorough history, physical examination, and visualization of the larynx by SVL. CT of the

Accepted for publication December 8, 2016.

No funding was received, and there are no conflicts of interest.

From the *Department of Otolaryngology-Head and Neck Surgery, Drexel University College of Medicine, Philadelphia, Pennsylvania; †Department of Radiology, Drexel University College of Medicine, Philadelphia, Pennsylvania; and the ‡Department of Otolaryngology-Head and Neck Surgery, Clinical Academic Specialties, Drexel University College of Medicine, Philadelphia, Pennsylvania.

Address correspondence and reprint requests to Robert T. Sataloff, 219 N Broad St., 10th Floor, Philadelphia, PA 19107. E-mail: RTSataloff@PhillyENT.com

Journal of Voice, Vol. 31, No. 5, pp. 601–604

1756-4646

© 2017 Published by Elsevier Inc. on behalf of The Voice Foundation.

<http://dx.doi.org/10.1016/j.jvoice.2016.12.006>

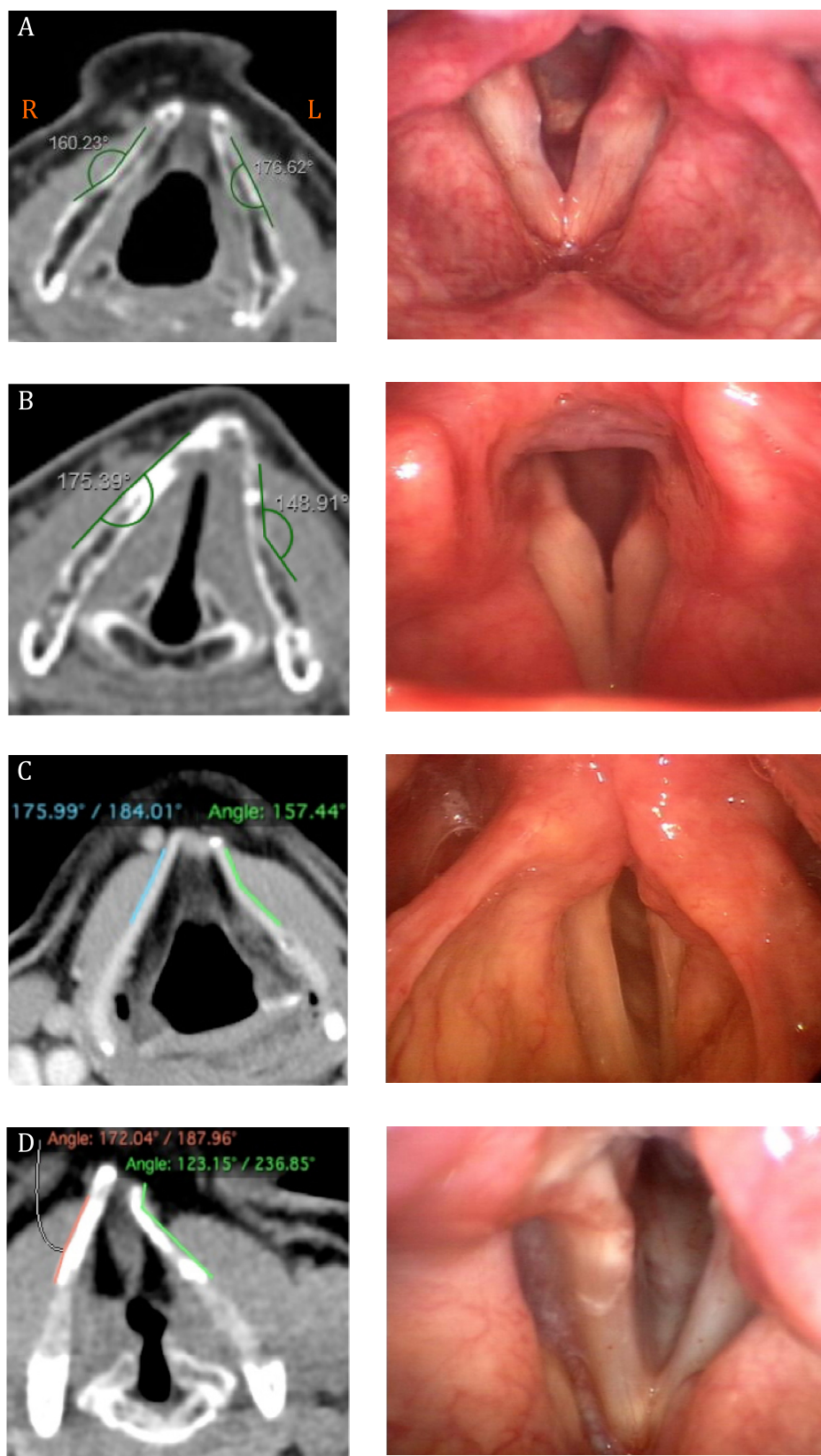


FIGURE 1. Computerized tomography representation of thyroid cartilage in patients with HLM on physical examination (A–F) and control (G). Measured angles are recorded in [Table 1](#). Corresponding stroboscovideolaryngoscopy is depicted for each patient. R, right; L, left.

Download English Version:

<https://daneshyari.com/en/article/5124137>

Download Persian Version:

<https://daneshyari.com/article/5124137>

[Daneshyari.com](https://daneshyari.com)