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Case Report

Long Standing Dysphonia Associated with Coexisting Benign Vocal Fold Nodule and Benign Multinodular Goitre: A Case Report

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Abstract

Background: Chronic dysphonia may arise from structural vocal fold lesions, inflammatory conditions, functional voice disorders, or other laryngeal and systemic causes. Coexisting thyroid enlargement can complicate clinical assessment, although coexistence does not establish a causal relationship. **Case presentation:** A 56-year-old woman presented with a seven-year history of persistent voice change and recurrent episodes of dry cough. Her medical history included hypertension and reflux symptoms for ten years. Laryngoscopy demonstrated a left vocal fold nodule with a phonatory gap. Contrast-enhanced computed tomography (CT) of the neck showed an approximately 1 mm enhancing focal lesion along the left vocal fold and a diffusely enlarged thyroid gland with bilateral nodules. The right thyroid lobe extended posteromedially and abutted the adjacent oesophageal wall, with a possible retropharyngeal goitre described radiologically. Thyroid ultrasonography classified the nodules as TI-RADS II. Fine-needle aspiration cytology was reported as Bethesda category II (benign). Thyroid function tests were normal. The patient underwent microlaryngeal surgery, after which her voice improved significantly. Histopathology confirmed it as vocal cord nodule, and the thyroid enlargement was managed conservatively. **Conclusion:** This case illustrates the importance of assessing persistent dysphonia in the presence of coexisting laryngeal and thyroid abnormalities. The relationship between the thyroid findings and voice symptoms remains uncertain. Documentation of histopathology, vocal fold mobility and objective postoperative voice outcomes would strengthen the clinical interpretation.

1. Introduction

Dysphonia is a common clinical symptom characterized by an alteration in voice quality, pitch, loudness, or vocal effort. It may result from a wide range of conditions, including inflammatory disorders, benign vocal fold lesions, neurological abnormalities, phonotraumatic

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injury, and neoplastic disease. Persistent dysphonia requires systematic clinical evaluation and direct visualization of the larynx to establish the underlying pathology and guide appropriate management. The Clinical Practice Guideline on Hoarseness (Dysphonia) recommends laryngoscopy when dysphonia fails to improve within four weeks, or sooner when a serious underlying cause is suspected [1].

Benign vocal fold lesions, including nodules, polyps, and cysts, are important structural causes of dysphonia. Vocal fold nodules are generally associated with repetitive phonotrauma and may interfere with normal vocal fold vibration, resulting in incomplete glottic closure and altered voice production [2]. The presence of a phonatory gap may contribute to inefficient phonation, although its clinical significance depends on the location and characteristics of the lesion, vocal fold mobility, and the overall vibratory pattern. Management is individualized and may include vocal hygiene, voice therapy, treatment of relevant contributing factors, and surgical intervention in appropriately selected patients [1, 2].

Gastroesophageal reflux and laryngopharyngeal reflux have also been investigated as potential contributors to laryngeal irritation and benign vocal fold pathology [3]. However, reflux symptoms are nonspecific, and their coexistence with a vocal fold lesion does not establish a causal relationship. The contribution of reflux to dysphonia should therefore be assessed in the context of the patient's clinical presentation and available diagnostic evidence [1, 4]. Recurrent cough may further complicate the clinical picture by contributing to laryngeal irritation and repeated mechanical stress.

Thyroid disorders represent another important consideration in the evaluation of voice abnormalities. Thyroid enlargement may be associated with voice changes through local mass effects or, in selected cases, dysfunction of the recurrent laryngeal nerve or other structures involved in phonation. Voice impairment has also been described in patients undergoing thyroid surgery, including those without an obvious postoperative vocal fold paralysis [5]. Nevertheless, thyroid nodules are frequently identified during clinical and radiological evaluation, and their coexistence with a laryngeal lesion does not necessarily indicate a direct pathological relationship. Thyroid function, ultrasound characteristics, cytological findings, anatomical relationships, and laryngeal examination must be interpreted together to determine their individual clinical significance [5, 6].

We report a 56-year-old woman with a seven-year history of dysphonia and recurrent dry cough, with a history of hypertension and long-standing reflux symptoms. Laryngoscopy revealed a left vocal fold nodule with a phonatory gap, while CT and ultrasonography demonstrated coexisting multinodular thyroid enlargement. Thyroid FNAC was benign (Bethesda category II), and thyroid function was normal. Following microlaryngeal surgery, the patient experienced significant improvement in voice, highlighting the importance of comprehensive evaluation of persistent dysphonia when laryngeal and thyroid abnormalities coexist.

2. Case Presentation

A 56-year-old woman presented with a seven-year history of persistent change in voice, accompanied by recurrent episodes of dry cough. Her medical history was significant for hypertension and long-standing reflux symptoms of approximately ten years' duration. Thyroid function tests were within normal limits.

Indirect laryngeal evaluation by Videolaryngoscopy in OPD revealed a benign-appearing nodule over the left vocal fold, associated with a phonatory gap Figure 1.



Figure 1: Videolaryngoscopy showing Vocal nodule over the left vocal fold

The patient also had midline swelling of neck since 5 years which increased gradually over that period Figure 2. In view of the persistent nature of the voice symptoms and the identified structural lesion, further radiological evaluation was undertaken.

Contrast-enhanced computed tomography (CECT) of the neck demonstrated a focal lesion along the left vocal fold, measuring approximately 1 mm as reported, with mild post-contrast enhancement. The remaining visualized laryngeal structures, including the tongue base, valleculae, epiglottis and aryepiglottic folds, were reported as normal. No significant cervical lymphadenopathy, tracheal deviation or airway narrowing was identified.

The CECT examination also revealed a diffusely bulky thyroid gland with heterogeneous post-contrast enhancement and multiple bilateral nodules Figure 3. The right thyroid lobe extended posteromedially and abutted the adjacent right lateral wall of the oesophagus, raising the radiological possibility of a retropharyngeal goiter.



Figure 2: Clinical Picture showing midline swelling of neck



Figure 3: CECT Scan showing bilateral enlarged Thyroid glands

Ultrasonography of the neck confirmed thyroid enlargement with increased vascularity and multiple bilateral solid and cystic/solid-cystic nodules, classified as TI-RADS II.

Fine-needle aspiration cytology of the thyroid swelling demonstrated follicular epithelial cells arranged in clusters and as singly scattered cells, accompanied by abundant colloid. No cytological features of papillary thyroid carcinoma were identified, and the specimen was classified as Bethesda category II (benign). The patient was euthyroid and was managed conservatively for the thyroid enlargement.

Following clinical evaluation, the patient underwent microlaryngeal surgery for the left vocal fold lesion Figure 4 and Figure 5.

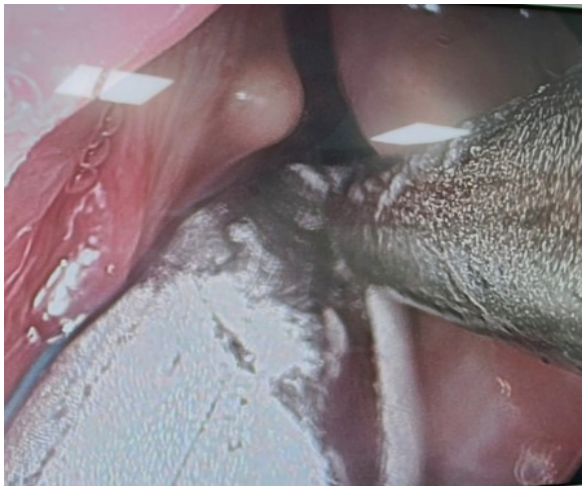


Figure 4: Intraoperative Picture Showing Left Vocal Cord Nodule

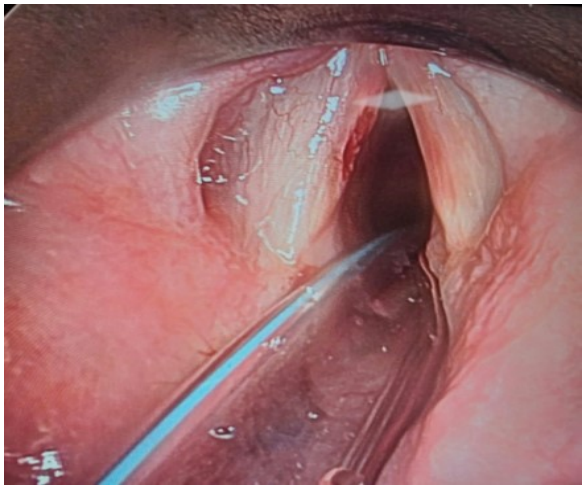


Figure 5: Post Operative Picture

Postoperatively, she experienced significant improvement in her voice. Histopathology confirmed the excised vocal fold lesion as vocal cord nodule Figure 6.

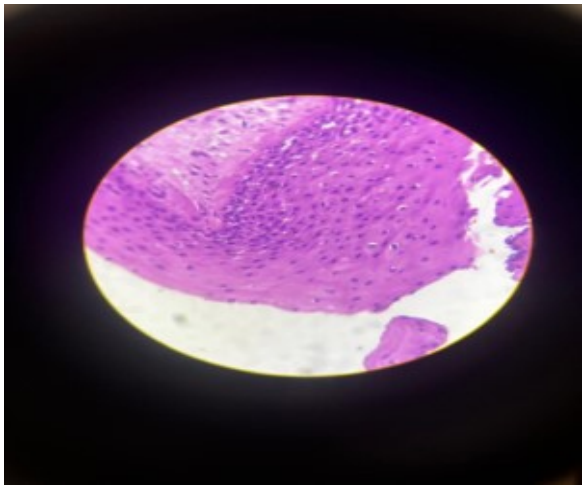


Figure 6: Microphotograph showing tiny nodular tissue covered by stratified squamous epithelium and intact basement membrane

The available clinical course suggested improvement following surgical treatment and on 3 Follow ups after the surgery patient showed no recurrence.

3. Discussion

Persistent dysphonia is a multifactorial clinical condition that requires evaluation of both structural laryngeal abnormalities and potential contributing factors. In the present case, a 56-year-old woman with a seven-year history of dysphonia and recurrent dry cough was found to have a left vocal fold nodule with a phonatory gap, coexisting multinodular thyroid enlargement, and a history of long-standing reflux symptoms. These findings highlight the importance of considering multiple possible contributors to voice dysfunction rather than assuming a single underlying cause.

Benign vocal fold lesions can interfere with normal mucosal vibration and glottic closure, resulting in altered voice quality and increased phonatory effort [3, 7, 8]. Management of benign vocal fold lesions may include behavioral voice therapy, surgical excision, and selected office-based procedures, depending on lesion characteristics and the patient's clinical requirements [9]. In this patient, the documented phonatory gap provides a plausible structural explanation for dysphonia. Microlaryngeal surgery was followed by partial improvement in voice, suggesting that the vocal fold lesion may have contributed to the symptoms. However, because histopathological confirmation and objective preoperative and postoperative voice assessments were unavailable, the precise nature of the lesion and the extent of surgical benefit cannot be determined conclusively.

Thyroid enlargement may be associated with voice symptoms through compressive effects or, in selected cases, laryngeal nerve dysfunction [10, 11]. However, in the present case, vocal fold mobility findings were not available, and a direct causal relationship between the thyroid enlargement and dysphonia could not be established [12].

Chronic coughing may also increase mechanical stress on the vocal folds and potentially perpetuate laryngeal irritation. Nevertheless, the available clinical information does not establish whether reflux or cough directly contributed to the formation or persistence of the vocal fold lesion.

The coexistence of thyroid enlargement adds another dimension to the clinical assessment. Thyroid disorders may be associated with voice abnormalities through local compressive effects, laryngeal nerve dysfunction, or changes in voice production that occur independently

of demonstrable nerve injury [10, 13]. In this case, ultrasonography demonstrated bilateral thyroid nodules, and fine-needle aspiration cytology was classified as Bethesda category II (benign). Thyroid function was normal, and conservative management was undertaken. Although CT suggested possible retropharyngeal extension of the right thyroid lobe, no significant tracheal deviation or airway narrowing was identified. The available findings do not establish that the thyroid enlargement contributed directly to the patient's dysphonia. Assessment of vocal fold mobility and the anatomical relationship between the thyroid and laryngeal structures would be particularly relevant to further clinical interpretation.

Significant improvement after microlaryngeal surgery suggests that the vocal fold lesion may have been one component of the patient's voice disturbance. However, slight phonatory gap may reflect persistent phonatory dysfunction, continuing laryngeal irritation, or other contributing factors. A review of benign vocal fold lesion management supports a role for voice therapy alongside surgical treatment in selected patients, although the available studies are heterogeneous and the optimal postoperative approach remains incompletely defined [14]. Repeat laryngoscopy, standardized voice assessment, and appropriate follow-up would help characterize the residual symptoms and guide further management.

Nevertheless, it illustrates the importance of comprehensive laryngeal evaluation in patients with chronic dysphonia and coexisting thyroid abnormalities, with careful interpretation of each finding and appropriate postoperative assessment.

4. Conclusion

Chronic dysphonia warrants a comprehensive evaluation of the larynx and thyroid gland, particularly when a vocal fold lesion coexists with multinodular goitre. This case highlights the importance of correlating clinical findings with laryngoscopic examination, radiological imaging, thyroid function tests, and cytological assessment to guide appropriate management. Microlaryngoscopic surgery was performed for the left vocal fold lesion, with partial improvement in voice postoperatively, while the benign cytological findings and euthyroid status supported conservative management of the thyroid nodules. Although thyroid enlargement may be associated with voice symptoms, a causal relationship could not be established in this patient. Careful assessment and appropriate follow-up are essential for optimizing voice outcomes and monitoring thyroid disease.

Article Information

Ethical Approval: Not applicable.

Informed Consent: Written informed consent was obtained from the patient for publication of this case report.

Consent for Publication: Written informed consent was obtained from the patient for publication of the case details and any accompanying images.

Patient Privacy: All identifying information has been removed to protect the patient's privacy.

Data Availability: The data supporting this case report are available from the corresponding author upon reasonable request, subject to patient confidentiality.

Conflict of Interest: The authors declare that they have no competing interest.

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Author's Contribution: A.K - Definition of intellectual content, Literature Survey, Prepared first draft of manuscript, implementation of study protocol, Data collection, Data analysis, Manuscript Preparation, GS- Manuscript Revision; S.J. - Manuscript Editing, Review and Article submission; G.S. - Concept, Design, Clinical Protocol, Data Collection, Manuscript Revision; M.S. - Literature Survey, Coordination and Manuscript revision; V.A - Design of study, Manuscript preparation. All authors of this article declare that we qualify for authorship as defined by ICMJE each author has participated sufficiently in work and takes public responsibility for appropriateness of content of this article.

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