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PERSISTENT HOARSENESS ASSOCIATED WITH LARYNGOPHARYNGEAL REFLUX AND SUSPECTED ORTNER'S SYNDROME: A CASE REPORT

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ABSTRACT

Laryngopharyngeal reflux (LPR) is an extraesophageal inflammatory disorder caused by the retrograde flow of gastric contents into the laryngopharyngeal region, leading to chronic irritation of the upper airway mucosa. Persistent hoarseness is a common symptom; however, dysphonia may also reflect rare cardiovascular causes such as Ortner's syndrome (cardiovocal syndrome), which results from recurrent laryngeal nerve dysfunction secondary to cardiovascular pathology. Diagnostic differentiation between these entities can be challenging due to overlapping clinical features. We report a 70-year-old woman with two months of persistent hoarseness following coronary artery stenting after myocardial infarction. She also experienced nocturnal cough, globus sensation, intermittent choking, and dysphagia. Flexible laryngoscopy showed bilateral vocal fold hyperemia and edema, posterior commissure hypertrophy, and partial glottic narrowing. The Reflux Symptom Index (RSI) score was 22 and the Reflux Finding Score (RFS) was 17, supporting LPR. Coronary angiography revealed total occlusion of the right coronary artery. Given her significant cardiovascular history, recurrent laryngeal nerve involvement due to suspected Ortner's syndrome was also considered. This case highlights overlapping manifestations of LPR and cardiovocal syndrome, complicating diagnosis. Comprehensive multidisciplinary evaluation is essential, particularly in elderly patients with cardiovascular disease, to avoid attributing persistent hoarseness solely to reflux and to identify potential cardiogenic causes of dysphonia.

Keywords: cardiovocal syndrome; hoarseness; laryngopharyngeal reflux; ortner's syndrome; recurrent laryngeal nerve palsy

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INTRODUCTION

Laryngopharyngeal reflux (LPR) is an inflammatory condition involving the retrograde movement of gastric contents into the larynx and pharynx. Unlike gastroesophageal reflux disease (GERD), LPR frequently presents without typical gastrointestinal symptoms such as heartburn or acid regurgitation. Patients commonly complain of chronic throat clearing, persistent cough, globus sensation, dysphagia, excessive throat mucus, and hoarseness due to repeated exposure of the laryngopharyngeal mucosa to gastric acid and pepsin (Brown et al., 2025; C. Chen & Liao, 2024; Cui et al., 2024; Krause et al., 2022; Lechien, Hans, et al., 2021). Hoarseness is considered a nonspecific symptom with numerous underlying etiologies including inflammatory, neurological, structural, and neoplastic disorders. Although benign laryngeal inflammation represents the most common cause, clinicians should remain aware of less common etiologies, particularly among elderly patients with significant systemic comorbidities. Ortner's syndrome, also known as cardiovocal syndrome, refers to recurrent laryngeal nerve palsy secondary to cardiovascular pathology. Anatomically, the left recurrent laryngeal nerve is more vulnerable to compression because of its longer intrathoracic course looping around the aortic arch before ascending through the tracheoesophageal groove. Various cardiovascular abnormalities including pulmonary hypertension, thoracic aortic aneurysm, congenital cardiac abnormalities, and ischemic heart

20 disease have been reported as associated conditions (Brown et al., 2025; Han et al., 2022; Krause & Yadlapati, 2024; Runggaldier et al., 2021, 2023)

26 The coexistence of LPR and Ortner's syndrome may create diagnostic challenges because both disorders can present with overlapping symptoms involving chronic dysphonia and throat discomfort. Failure to recognize cardiovascular contributions to persistent hoarseness may delay diagnosis and management. This report describes a patient presenting with chronic hoarseness associated with findings suggestive of both laryngopharyngeal reflux and suspected Ortner's syndrome following coronary intervention. This study aims to identify and analyze the causes of persistent hoarseness (dysphonia) in elderly patients with a history of cardiovascular disease, particularly in differentiating between Laryngopharyngeal Reflux (LPR) and possible Ortner's syndrome (cardiovocal syndrome).

METHOD

18 This study was conducted as a descriptive case report involving a 70-year-old female patient who presented to the otorhinolaryngology outpatient clinic with persistent hoarseness lasting for two months following coronary artery stenting due to myocardial infarction. A comprehensive clinical evaluation was performed, including detailed history taking focused on the onset, duration, and progression of dysphonia, as well as associated symptoms such as nocturnal cough, globus sensation, dysphagia, throat discomfort, and intermittent choking episodes. The patient's cardiovascular history, previous interventions, and current medications were also reviewed. Physical examination included a complete otorhinolaryngological assessment and flexible fiberoptic laryngoscopy to evaluate the supraglottic and glottic structures. Laryngoscopic findings assessed included vocal fold mobility, laryngeal edema, hyperemia, posterior commissure hypertrophy, and degree of glottic narrowing. Reflux-related manifestations were quantified using validated clinical instruments, namely the Reflux Symptom Index (RSI) and Reflux Finding Score (RFS). An RSI score greater than 13 and an RFS score greater than 7 were considered supportive of laryngopharyngeal reflux diagnosis. To evaluate possible cardiovascular causes of recurrent laryngeal nerve dysfunction, cardiovascular investigations and previous coronary angiography results were reviewed. Coronary angiography demonstrated total occlusion of the right coronary artery. Considering the persistence of hoarseness despite reflux-related findings and the patient's significant cardiovascular disease, recurrent laryngeal nerve involvement associated with suspected Ortner's syndrome was considered. A multidisciplinary approach involving otorhinolaryngology and cardiology evaluation was used to correlate clinical, laryngoscopic, and cardiovascular findings in order to establish the differential diagnosis and determine the possible coexistence of laryngopharyngeal reflux and cardiovocal syndrome.

RESULT

10 A 70-year-old woman presented to the Ear, Nose, and Throat outpatient clinic at Universitas Kristen Indonesia General Hospital with a chief complaint of persistent hoarseness lasting approximately two months. According to the patient, symptoms developed shortly after coronary artery stenting performed following myocardial infarction. The patient additionally reported nocturnal coughing, worsening throat discomfort while lying supine, globus sensation, intermittent choking episodes during meals, and mild dysphagia. She denied fever, hemoptysis, odynophagia, or significant weight loss. There was no previous history of neck surgery, laryngeal trauma, or smoking. Physical examination demonstrated stable general condition with blood pressure of 196/94 mmHg, heart rate of 89 beats per minute, respiratory rate of 20 breaths per minute, and body temperature of 37.1°C. Neck examination showed no cervical lymphadenopathy or thyroid enlargement. Indirect laryngoscopic examination demonstrated diffuse hyperemia and edema involving both vocal folds, posterior commissure hypertrophy, and partial narrowing of the glottic airway. No suspicious mass,

granulomatous lesion, or vocal fold tumor was identified. Subjective and objective reflux assessments were subsequently performed. The patient's Reflux Symptom Index (RSI) score was 22, while the Reflux Finding Score (RFS) was 17, both exceeding diagnostic thresholds suggestive of significant laryngopharyngeal reflux disease.^{7,8} Further cardiovascular evaluation through coronary angiography revealed total occlusion of the right coronary artery. Considering the patient's cardiovascular history and persistent hoarseness, recurrent laryngeal nerve involvement secondary to cardiovascular pathology consistent with suspected Ortner's syndrome was considered as an additional contributing factor.

The patient was treated with proton pump inhibitor therapy, dietary and lifestyle modification, reflux precautions, and continued cardiovascular management through multidisciplinary collaboration involving otolaryngologists and cardiologists.



Figure 1. Indirect laryngoscopic findings demonstrating diffuse laryngeal edema, hyperemia, and partial glottic narrowing consistent with laryngopharyngeal reflux

Table 1.

Reflux Symptom Index (RSI) Questionnaire

In the last month have you suffered from		1	2	3	4	5
1	Hoarse Voice/Voice Problems			√		
2	Clearing your throat	√				
3	Excess mucus/Post Nasal Drip (PND)	√				
4	Difficulty swallowing				√	
5	Coughing after eating/lying down		√			
6	Difficulty breathing/choking				√	
7	Annoying cough		√			
8	A lump in the throat				√	
9	Heartburn, chest pain, indigestion, acid regurgitation	√				
Total Score				22		

Reflux Finding Score		
Subglottic Edema	2 = present 0 = absent	2
Ventricular Obliteration	2 = partial 4 = complete	2
Erythema/Hyperemia	2 = arytenoids only 4 = diffuse	4
Vocal Fold Edema	1 = mild 2 = moderate 3 = severe 4 = polypoid	3
Diffuse Laryngeal Edema	1 = mild 2 = moderate 3 = severe 4 = obstructing	2
Posterior Commissure Hypertrophy	1 = mild 2 = moderate 3 = severe 4 = obstructing	2
Granuloma/Granulation	2 = present 0 = absent	0
Thick Endolaryngeal Mucus	2 = present 0 = absent	2
Total:		17

Figure 2. Reflux Finding Score (RFS) Assessment

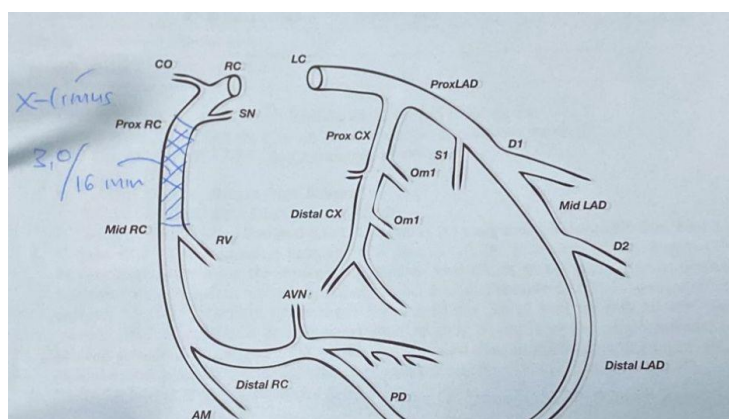


Figure 3. Coronary angiography

DISCUSSION

Persistent hoarseness is one of the most common complaints encountered in otolaryngology practice. The condition may arise from inflammatory disease, vocal misuse, neurological abnormalities, benign lesions, or malignant laryngeal pathology. Nevertheless, clinicians should also consider cardiovascular-related recurrent laryngeal nerve dysfunction as an uncommon but clinically important differential diagnosis (G. Chen & Lechien, 2025; Han et al., 2022; Lechien, Saussez, et al., 2019; Lechien, 2026)

Ortner's syndrome results from compression, traction, or irritation of the recurrent laryngeal nerve by enlarged or abnormal cardiovascular structures. The left recurrent laryngeal nerve is particularly vulnerable because it follows a longer intrathoracic course, looping around the aortic arch, making it more susceptible to mediastinal compression than the right side (Cuff & Yadlapati, 2025; Krause & Yadlapati, 2024; Lechien, Akst, et al., 2019; Salihefendic et al., 2017; Samuels et al., 2024)

In the present case, the patient demonstrated multiple clinical findings strongly suggestive of laryngopharyngeal reflux. Symptoms including chronic hoarseness, globus sensation, nocturnal

cough, and intermittent dysphagia corresponded with elevated RSI and RFS scores. Indirect laryngoscopic examination additionally demonstrated diffuse laryngeal edema and posterior commissure hypertrophy, findings commonly associated with chronic reflux exposure (Barrett et al., 2020; C. Chen & Liao, 2024; Krause & Yadlapati, 2024; Lechien, Akst, et al., 2021, 2021)

Despite these findings, the patient's recent myocardial infarction and coronary intervention raised suspicion that recurrent laryngeal nerve dysfunction secondary to cardiovascular pathology might also contribute to the persistent hoarseness. Cardiovascular abnormalities may alter mediastinal anatomy sufficiently to produce neural compression or stretching, thereby resulting in vocal dysfunction.

The coexistence of LPR and cardiovocal syndrome may create substantial diagnostic difficulty because both disorders present with similar upper airway complaints such as chronic cough, throat discomfort, and voice alteration. Consequently, evaluation of persistent hoarseness in elderly patients with cardiovascular comorbidities should not focus solely on reflux-related etiologies. This case emphasizes the importance of comprehensive multidisciplinary evaluation involving both otolaryngologists and cardiologists in identifying multifactorial causes of chronic dysphonia and establishing appropriate management strategies. However, definitive confirmation of recurrent laryngeal nerve compression was not established because further imaging and objective vocal fold mobility assessment were not available. Laryngeal stroboscopy was not performed due to limited facility availability at our institution.

CONCLUSION

Persistent hoarseness may arise from multifactorial conditions involving both inflammatory reflux disease and cardiovascular-associated recurrent laryngeal nerve dysfunction. In elderly patients with significant cardiovascular history, Ortner's syndrome should be considered as a possible contributing etiology of chronic dysphonia. Early multidisciplinary assessment is important to improve diagnostic accuracy and optimize patient management.

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