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CASE REPORT

ORTNER SYNDROME (CARDIOVOCAL SYNDROME)

ABSTRACT

Occurrence of paralysis in left vocal fold due to compression of left recurrent laryngeal nerve between pulmonary artery and aorta or between aorta and aortic ligament secondary to cardiac pathologies such as left atrial hypertrophy, pulmonary hypertension is defined as Ortner syndrome in the literature that it is extremely rare clinical entity. In this study, a case was presented, who had referred due to complaint of hoarseness and diagnosed as Ortner syndrome based on clinical and laboratory examinations. Seventy two years old female patient admitted to our clinic with complaint of hoarseness. Videolaryngoscopic examination revealed left vocal fold paralysis and no etiological factor other than left atrial hypertrophy and pulmonary hypertension could be found. Therefore, the patient was diagnosed Ortner syndrome. Ortner syndrome should be considered in assessment of hoarseness in patients with cardiac pathology, who are particularly in geriatric group.

Key Words: Vocal Cord Paralysis; Hypertension, Pulmonary.



OLGU SUNUMU

ORTNER SENDROMU (KARDİYOVOKAL SENDROM)

Öz

Sol rekürren larengeal sinirin sol atrium hipertrofisi, pulmoner hipertansiyon yada aort anevrizması gibi kardiyak patolojilere sekonder olarak pulmoner arter ile aort yada aortik ligaman arasında sıkışması sonucu, sol vokal foldda paralizisi ve buna bağlı ses kısıklığı gelişmesi literatürde Ortner sendromu olarak tanımlanmakta olup son derece nadir karşılaşılan bir klinik durumdur. Bu çalışmada ses kısıklığı şikayeti ile başvuran ve yapılan klinik ve laboratuvar değerlendirme sonucunda Ortner sendromu tanısı konulan bir olgu sunulmuştur. 80 yaşında kadın hasta ses kısıklığı yakınması ile kliniğimize başvurdu. Yapılan videolarenoskopik inceleme sonucunda sol vokal fold paralizisi saptanan hastada sol atrium hipertrofisi ve pulmoner hipertansiyon dışında herhangi bir etiyolojik faktör tespit edilmedi. Bu nedenle hastaya Ortner Sendromu tanısı konuldu. Özellikle geriyatrik yaş grubundaki kardiyak patolojili hastalarda ses kısıklığı değerlendirmesinde Ortner sendromu akıldan bulundurulmalıdır.

Anahtar Sözcükler: Vocal Cord Paralysis; Pulmonary Hypertension.

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INTRODUCTION

Vocal fold paralysis is a common problem encountered in otolaryngology. It is not only a disease entity, but also a symptom of other diseases. Vocal fold paralysis may be caused by pathologies of nucleus ambiguus, supranuclear tractus, vagal or recurrent laryngeal nerves (RLN) (1). Moreover, tumor invasion to superior mediastinum, neck mass lesions and iatrogenic injury as well as metabolic, toxic and neurogenic etiologies may lead to RLN paralysis (2). Also known as cardiovocal syndrome, Ortner syndrome is a rare clinical entity and is caused by left RLN paralysis secondary to cardiovascular disorders (1-4). Here, a case who was admitted with a complaint of hoarseness and diagnosed as Ortner syndrome based on clinical and laboratory examinations is presented.

CASE REPORT

A 72-year old female patient was admitted to our clinic due to hoarseness persisting for 6 months. Medical history of the non-smoker patient involved hypertension (HT) and diabetes mellitus (DM) for the last ten years. The patient did not report dysphagia, odinophagia or loss of weight but stated that she sometimes coughs when swallowing. The patient also denied any infections prior to the complaint of hoarseness.



Figure 1— Paralysis of left vocal fold. Note that the left vocal fold is fixed at paramedian position while the right vocal fold makes a full abduction during inspiration.

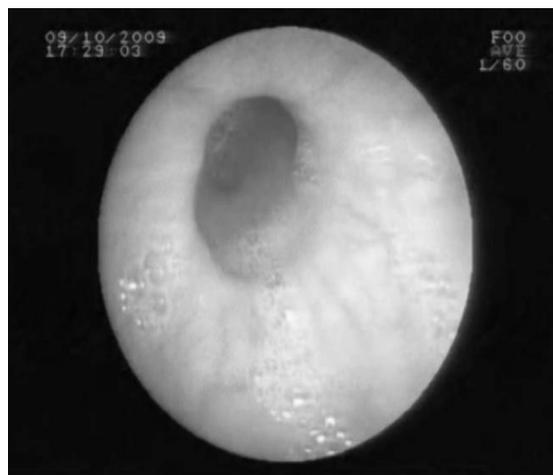


Figure 2— Other than minimal erosion, normal appearance is observed in esophagoscopy.

In physical examination, no mass lesion or pathologic lymphadenopathy was found in the neck. Videolaryngoscopic examination showed paramedian left vocal fold paralysis (Figure 1).

Within scope of etiological research for vocal cord paralysis, no pathology was detected in neck and thyroid ultrasonography (USG). Esophagoscopy revealed a normal peristalsis and the mucosa was normal other than minimal erosion (Figure 2).

The patient underwent neck (including cranial basis) and thorax computerized tomography (CT) imaging. While the neck CT was normal, the thorax CT showed that pulmonary trunk diameter was 45 mm, right pulmonary artery diameter was 31 mm, left pulmonary artery diameter was 31 mm and the artery was ectatic and these findings were suggestive of pulmonary hypertension (Figure 3). Therefore, the patient was consulted with the cardiology clinic, and PA chest roentgenogram, electrocardiography (ECG), echocardiography (ECHO) and catheter angiography was planned. Increased mediastinal width and cardiothoracic index was also observed in PA chest roentgenogram (Figure 4).

Having normal electrocardiographic findings, the patient had a pulmonary artery pressure of 80 mmHg in echocardiography. Catheter angiography also showed increased pulmonary arterial width.

Based on these findings, no etiological factor other than primary pulmonary hypertension was found explaining the

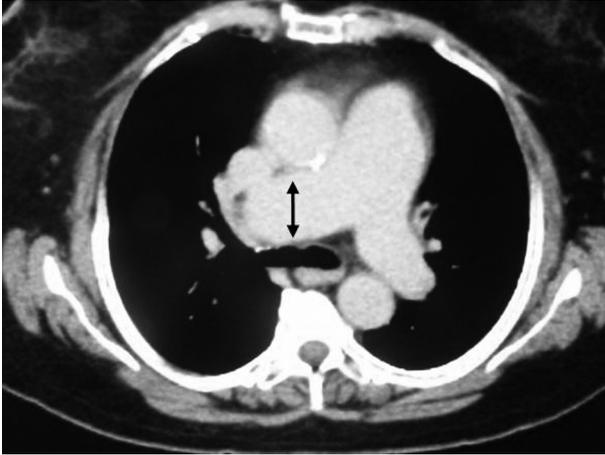


Figure 3— Pulmonary arterial dilatation is observed in thoracic CT examination. Arrow indicates the enlarged pulmonary artery.



Figure 4— Left atrial hypertrophy and increased cardiothoracic index can be observed in chest roentgenogram.

left vocal fold paralysis and the patient was diagnosed as Ortner syndrome.

DISCUSSION

Recurrent laryngeal nerve innervates all muscles of the larynx except the cricothyroid muscle. This nerve has a different anatomic route on the right and the left side. On the right side, RLN branches from the vagal nerve just above the subclavian artery. It traverses through the superior aspect by intercrossing the artery. By intercrossing common carotid from the anterior aspect, it enters the tracheo-esophageal sulcus. The left RLN branches from the vagal nerve where the vagal nerve approaches thoracic cavity from the anterior aspect of common carotid's and subclavian artery's branching point and the posterior aspect of the brachiocephalic vein. It lies inferior to the medial side from anterolateral of arcus aorta. It passes through the left side of ligamentum arteriosum and it forms an elbow beneath arcus aorta and it enters the tracheoesophageal sulcus in medial aspect. It provides a branch to the inferior constrictor branch and lies inferior to this muscle and it reaches the larynx by passing posterior to cricothyroid joint (3). Due to the longer route and close relation with intra-thoracic structures, the left RLN is more susceptible to pathologies (1).

Bilateral or unilateral, left-sided or right-sided, vocal cord paralysis as well as paralyzes of peripheral and central origin may have different etiologies. Unilateral paralysis is in large

part caused by an RLN injury in neck traumas or by compression of RLN due to thyroid and neck mass lesions, cardiovascular diseases, esophagus and lung malign tumors. When extra-laryngeal factors are considered, the left vocal fold paralysis is more common on the right side (5). The most common reason for neck-region involvement is iatrogenic paralysis occurring particularly due to thyroid surgery. The right RLN is more commonly injured as it has an anteriolateral localization at the inferior pole of the thyroid gland and as this position is less protected compared with the left RLN. At thoracic level, the left RLN is affected more from the lesions in this region when compared to the right RLN, due to the anatomic route. Bilateral vocal fold paralysis more commonly occurs due to central, metabolic and toxic etiologies. In a recent study involving 466 cases, iatrogenic etiologies caused by surgical interventions (33%) were reported to be the most common cause of unilateral VF paralysis, followed by idiopathic paralysis (22%), neoplastic tumors (19%) and intubation practices (7.5%). Compression lesions have a lower percentage (<5%) (6). In another study, causes of unilateral VF paralysis were reported to be neoplasms in 32%, idiopathic in 16%, traumatic in 11% and compression in 5% (5).

In clinical examination of the presented case with no history of neck and thoracic surgery, first, a comprehensive head-neck region assessment focusing on the larynx and the surrounding tissues was performed to find the pathology affecting the movements or innervation of vocal cord, however, findings of laryngeal and physical examination were normal.



In the neck USG examination performed to identify etiology of the mass lesion leading to compression in the neck region and particularly of thyroid gland, no pathology was observed. Having normal esophagoscopy findings, the patient underwent cranial basis, neck and thoracic contrasted CT examination. In CT examination, no pathology was found in the cranial basis and the neck region, but there was an increase in the diameter of pulmonary artery. Cardiovascular pathology was suspected, thus, PA chest roentgenogram, ECG, ECHO and angiography was performed and primary pulmonary hypertension was diagnosed.

Although Ortner Syndrome was first described as a consequence of mitral valve stenosis, several other cardiologic entities including mitral regurgitation, atrial mixoma, left ventricular aneurysm, pulmonary arterial hypertrophy, core pulmonale, and aortic aneurysm were later shown to cause left vocal fold paralysis due to compression or traction of the left RLN between arcus aorta and other neighboring structures, particularly the pulmonary artery. Thus the syndrome is also referred as cardiovocal syndrome (3).

In patients with cardiovascular disorders, it is crucial to identify vocal fold paralysis. Aspiration, dyspnea, change in voice quality and decrease in quality of life should be assessed immediately. If symptoms are well tolerated and no aspiration related problems are present, assessing laryngeal functions once in every six months will be sufficient. However, in symptomatic patients, the best treatment approach is medialization of the vocal fold. Two definite indications are present for the the operation; aspiration pneumonia and patient's decision to treat hoarseness for a better quality of life (e.g vocal artists) (7). In our case, dyspnea and hoarseness were well tolerated and aspiration signs were found only when liquid food was ingested. However, the patient rejected surgery for her complaints.

Although hoarseness is a common symptom in otorhinolaryngology, Ortner syndrome is a rare condition. For patients with idiopathic left VC paralysis, particularly for those with history of cardiovascular disorders, physicians should keep this syndrome in mind and consider the broad spectrum of etiological factors in VF paralysis, especially in elderly patients.

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