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Cardiovocal Syndrome: A Case Report

[1]Dr. Manisha Khande, Assistant Professor, Department of Internal Medicine, Pt Jawahar Lal Nehru memorial medical college and Hospital, Raipur, Chhattisgarh, India

[2]Dr. DP Lakra, Professor, Department of Internal Medicine, Pt Jawahar Lal Nehru memorial medical college and Hospital, Raipur, Chhattisgarh, India

[3]Dr. Anand Vardhan, Post Graduate Resident, Department of Internal Medicine, Pt Jawahar Lal Nehru memorial medical college and Hospital, Raipur, Chhattisgarh, India

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Corresponding Author: Dr. Anand Vardhan, PG Scholar, Department of Internal Medicine, Pt Jawahar Lal Nehru memorial medical college and Hospital, Raipur, Chhattisgarh, India

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Abstract

A 33 year old female patient came to medicine outdoor department with sudden onset of hoarseness. She was not having any other complaint except the sudden hoarseness of her voice. She was a non smoker, non alcoholic female with her father having a history of Lung cancer who eventually died at the age of 62 years. Otorhinolaryngology review was done and it was found on laryngoscopy that left vocal cord paralysed. Cardiovocal syndrome or Ortner's syndrome is hoarseness due to left recurrent laryngeal nerve palsy caused by mechanical affection of the nerve from enlarged cardiovascular structures. Fiberoptic laryngoscopy showed left vocal cord palsy. Computed tomography of the neck and chest revealed extensive enlargement of the pulmonary arteries and excluded a malignant tumor.

Physical examination revealed a long diastolic murmur. Echocardiography had mitral stenosis with hugely dilated left atrium (6.0 cm) as inference, enlarged pulmonary artery (3.80 cm). The diagnosis of cardiovocal syndro me was retained.

Keywords

Ortner syndrome, case report, cardiovocal, Thromboembolic Pulmonary Hypertension.

Introduction

Mitral stenosis is a valvular lesion most commonly caused byrheumatic carditis. If untreated, it can lead to left atrial dilatation, atrial fibrillation and potentially fatal complications. Left vocal cordpalsy

and dysphagia are uncommon complications.[1] Cardio vocal syndrome or Ortner's syndrome usually presents as hoarseness due to left recurrent laryngeal nerve palsy caused by mechanical affection of the nerve from enlarged cardiovascular structures. Hoarseness due to left recurrent laryngeal nerve paralysis was first described in 1897 by Nobert Ortner in a patient with mitral stenosis and left atrial enlargement.[2] Various others have also found mitral valve disease to be responsible in 0.6–5% cases of recurrent laryngeal nerve paralysis.[3] We present a case report of Ortner's syndrome caused by stenosis of mitral valve.

Case report

A 33-year-old female presented to our out patient departmentwith history of shortness of breath NYHA class III, sudden onset hoarseness of voice since 10 days, not associated with difficulty in swallowing. Patient is a known case of rheumatic heart disease on treatment for last 6.5 years. No history of any other comorbidity like diabetes, Hypertension. On examinationpatient was conscious, oriented, afebrile without any evidence of cyanosis and she was dyspnoeic, without any clubbing. On palpation, central position of trachea was confirmed, on auscultation, she had long diastolic murmur with features of severe pulmonary artery hypertension. Chest Xray showed Cardiomegaly (Fig.1) ECG showed left atrial enlargement(Fig.3). 2D echocardiogram showed mitral stenosis with left atrial dilatation (6.0 cm) enlarged pulmonary artery (3.80 cm). Fiber optic laryngoscopy revealed left vocal cord palsy (Fig. 1), while the rest of the otolaryngologic examination was normal. Appropriate investigations were done to delineate thecause of left recurrent laryngeal nerve palsy. The clinical symptomsin combination with imaging findings were consistent with cardiovocal syndrome. Patient is planned for mitral valve replacement surgery in July 2021.

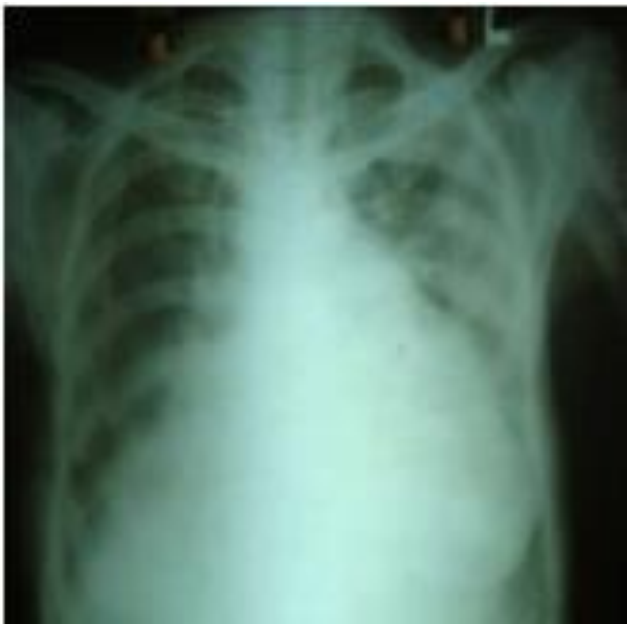

Fig.1: Chest X-ray

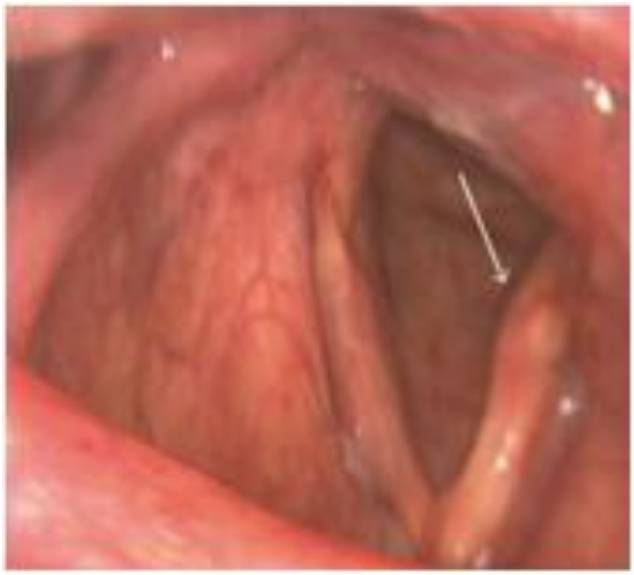

Fig. 2: Left Vocal Cord Palsy

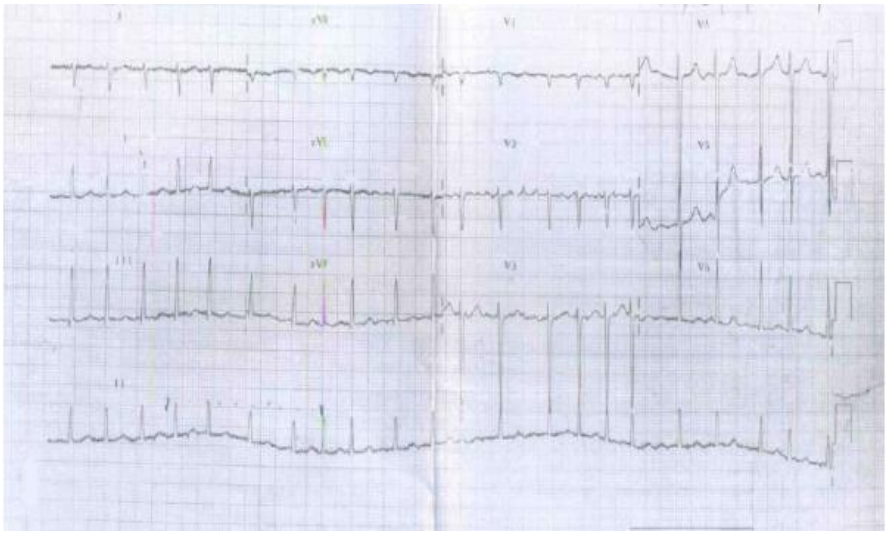

Fig. 3: Electrocardiogram of the Patient

Discussion

The recurrent laryngeal nerves which branch from vagus nerveprovide ipsilateral motor innervations to the intrinsic laryngeal muscles for vocalization. The right recurrent laryngeal nerve branches at the level of the right subclavian artery and hooksaround this artery. The left recurrent laryngeal nerve is longer andit hooks under the arch of aorta, posterior to the ligamentum arte-riosum before ascending towards the tracheoesophageal groove. Unilateral damage to the recurrent laryngeal nerve usually causes hoarseness, as in our patient. Because of the anatomical course of the recurrent laryngeal nerves, the left side is more vulnerableto damage. In unilateral vocal cord palsy due to thoracic diseases, left-sided vocal cord paralysis was 1.75 times more frequent than right-sided paralysis and can happen at any level of its course.[4]Cardio vocal syndrome was originally described in 1897 by Nobert Ortner in three patients with severe mitral stenosis.[3]

Heexplained that hoarseness was caused by compression of the left recurrent laryngeal nerve by the enlarged left atrium. Later it was described with other identifiable cardiovascular diseases associated either with left atrial enlargement or severe pulmonary hypertension including congenital heart diseases. The term cardio vocal syndrome was first comprehensively described in English journals in 1958 by Stocker and Enterline.[5] Pathophysiological mechanism of this syndrome is thought to be compression of the left recurrent laryngeal nerve between the aorta and dilated pulmonary artery.[6] if treated early, he results are impressive because reversibility of the nerve damage depends on the duration of injury.[7,8] There are few casereports where there is significant improvement in hoarseness of voice after mitral valvotomy/MVR.[1] If the cardiovascular condition of a patient does not allow for causal treatment and the symptoms are severely disabling, voice therapy or even surgical tightening of the affected vocal cord might be considered.

Conclusion

Ortner's syndrome also known as cardio vocal syndrome is arare condition which may be secondary to many cardiopulmonary disorders. It would be pertinent to look beyond the larynx for a cause of vocal cord palsy in patients presenting with hoarseness of voice and also routinely perform cardiac workup to rule out cardio mechanical causes of vocal cord palsy.

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