Thoracic Aortic Aneurysm Presenting as Vocal Cord Paralysis

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ABSTRACT

We present a case of 80-year-old man with two-year history of hoarseness of voice secondary to left vocal cord paralysis. CT scanning revealed a saccular thoracic aneurysm compressing the left recurrent laryngeal nerve. A review of literature on Ortner's or cardiovocal syndrome is presented.

KEYWORDS: Thoracic aortic aneurysm, vocal cord palsy, Ortner's syndrome

INTRODUCTION

Cardiovascular disease presenting as vocal cord palsy is a rare occurrence. This cardiovocal syndrome was first described by N. Ortner, an Austrian physician; in 1897.[1] He first described it in a patient with vocal cord paralysis secondary to left atrial enlargement due to mitral valve stenosis. Since then a variety of cardiac problems leading to left recurrent laryngeal nerve (RLN) paralysis have been reported. Primary pulmonary hypertension, aortic dissection, ischaemic heart disease and various congenital heart disorders have been implicated.[2,3] We present a rare case of hoarseness of voice secondary to saccular thoracic aortic aneurysm.

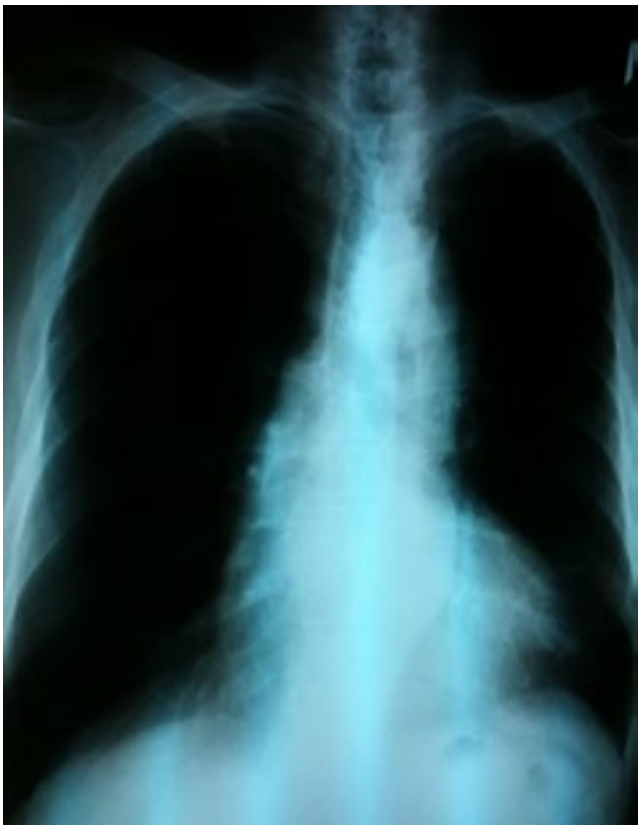

Figure 1. Chest radiography of the patient showing no lung lesion or mediastinal enlargement

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CASE REPORT

An 80-year-old man with no known medical illness presented to the Ear, Nose and Throat department of our hospital complaining of a two-year history of hoarseness of voice. He had no symptoms of aspiration, dysphagia or dyspnea. He also did not complain of chest or back pain. There was no history of trauma or intubation. Physical examination did not reveal any abnormalities. Laryngoscopy revealed a left vocal cord paralysis in paramedian position, well compensated by the right vocal cord. No mass was seen

in the larynx or hypopharynx. Examinations of the other cranial nerves were normal. On chest radiography, there was no feature to suggest lung pathology or enlarged mediastinal structure (Figure 1). Computed tomography of the neck to the thorax, supplemented with CT angiogram, revealed a saccular aneurysm arising from the inferolateral wall of the arch of aorta; distal to the origin of the left subclavian artery. As this is the area where the left RLN\ normally passes, it is highly suggestive that the aneurysm was compressing the left RLN causing the hoarseness of voice (Figure 2). Inflammation was thought to be the cause of the aneurysm in this patient. Investigations for syphilis, tuberculosis and salmonella infections, however, were negative. He was offered further treatment for the aneurysm, but he declined due to old age.

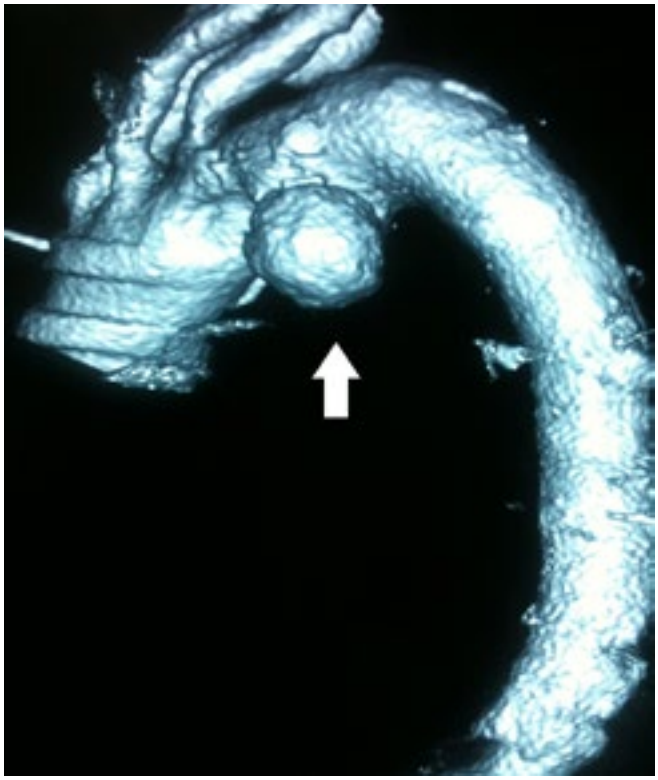

Figure 2. CT angiogram revealed saccular thoracic aneurysm (arrow). The left RLN usually passes at this area which is below and behind the aorta at the level of the ligamentum arteriosum.

DISCUSSION

Thoracic aortic aneurysm presenting as vocal cord paralysis is a rare occurrence. Five percent of recurrent laryngeal nerve palsy is due to thoracic aortic aneurysm.[4] The aneurysm is thought to cause the paralysis by compressing the left recurrent laryngeal nerve as it hooks around the ligamentum arteriosum between the pulmonary artery and the aorta. The cause of our patient's aneurysm is thought to be inflammatory in nature. Another more common cause is atherosclerosis.

Physical examination is usually normal in these patients. Lung pathology causing compression to the RLN can be ruled out by chest radiography. CT scan from intracranial to the thorax that includes the peripheral pathway of the vagus, and the recurrent laryngeal nerve is paramount in patients with vocal cord paralysis of unknown aetiology. Thoracic aortic aneurysm should be considered in the differential diagnosis in patients presenting with Ortner's syndrome.

Aortic aneurysm is a life-threatening condition if it ruptures. Some authors have advocated that the presence of recurrence laryngeal nerve palsy is a prodrome of aneurysm rupture.[5] From literature search, the duration between the presence of recurrent laryngeal nerve palsy and the development of aneurysm rupture is unknown.

Asymptomatic aneurysms can be managed medically. Medical management includes aggressive blood pressure control and serial imaging of the aneurysm to evaluate growth and structure. Asymptomatic aneurysms that are rapidly expanding warrant a surgical management. Surgery is also indicated for those who are symptomatic or for any aneurysms that are over 50 to 60 mm in diameter. Saccular aneurysm or pseudoaneurysm, as in this patient, is another indication for surgical management, as they are at higher risk to rupture. Surgery for thoracic aortic aneurysm can be in the form of an open surgery or in the form of endoluminal stent aneurysm repair (TEVAR: Thoracic Endovascular Aneurysm Repair). Our patient was advised to undergo surgery. However, after a lengthy discussion with him and his family, they have decided for medical management in view of his advanced age.

The reversal of Ortner's syndrome after aneurysm repair has been described. Stoob demonstrated for the first time the reversal of Ortner's syndrome after endoluminal aneurysm repair.[6] After the release of the RLN compression, it is possible to regain the mobility of the vocal cord. If the vocal cord paralysis persists, or if the patient has symptoms of aspiration, then medialisation of the vocal cord can be undertaken.

In conclusion, in patients presenting with hoarseness of voice without any obvious neck or lung pathology, thoracic aortic aneurysm need to be considered as a possible cause.

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