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Clinical Record

# Cardiovascular hoarseness: an unusual presentation to otolaryngologists

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**Abstract**

Objective: We discuss the case of a 73-year-old woman with a six-month history of hoarseness secondary to an aortic arch pseudoaneurysm.

Method: We present the findings of an extensive review of the literature relating to cardiovascular disorders involving the recurrent laryngeal nerve (i.e. Ortner's syndrome).

Results: Ortner's syndrome, also known as cardiovocal syndrome, is a rare condition, with few reports in the literature.

Conclusion: This is only the second documented case of Ortner's syndrome in Great Britain and Ireland, and the first demonstrating an aortic pseudoaneurysm.

**Key words: Recurrent Laryngeal Nerve; Voice Disorders; Aortic Aneurysm**

## Introduction

The recurrent laryngeal nerve is a branch of the Xth cranial nerve and supplies all the intrinsic muscles of the larynx, with the exception of the cricothyroid. A recurrent laryngeal nerve palsy typically presents with breathy dysphonia, dyspnoea due to glottic incompetence or dysphagia resulting in aspiration, particularly with liquids.

The causes of recurrent laryngeal nerve paralysis in an ENT setting have been classified as: non-surgical paralysis (thyroid tumour, idiopathic and lung cancer); surgical paralysis (thyroid and oesophageal operations, intubation); or a combination of the two.[1]

Ortner's syndrome, also known as cardiovocal syndrome, is a rare condition whereby a cardiovascular disorder affects the recurrent laryngeal nerve. It was first documented in 1897. Recurrent laryngeal nerve palsy secondary to an aortic pseudoaneurysm has not previously been described.

## Case history

A 73-year-old, non-smoking woman with a long history of hypertension presented to the ENT out-patient department complaining of hoarseness for six months, apparently precipitated by a respiratory tract infection. She denied any symptoms of aspiration, dysphagia, odynophagia or weight loss.

Clinical examination failed to elicit head and neck lymphadenopathy. However, a prominent pulsation in the left side of the patient's neck was noted. Flexible laryngoscopy identified the cause of the hoarseness to be a paralysed left vocal fold, in the paramedian position.

A contrast-enhanced computed tomography image revealed a 3.5 cm bulge in the infero-posterior wall of the aortic arch, filled with thrombus (Figure 1). Subsequently, a magnetic resonance angiogram also demonstrated a thrombus-filled aneurysm arising just beyond the origin of the great vessels and extending posteriorly, in intimate contact with the left main pulmonary artery (Figure 2). The lungs were otherwise unremarkable.

A cardiothoracic surgical opinion was arranged. In view of the patient's general medical condition, surgical intervention was not undertaken.

## Discussion

The recurrent laryngeal nerve supplies all the intrinsic muscles of the larynx, with the exception of the cricothyroid, and is thus responsible for both adduction and abduction of the vocal folds. The left vagus nerve gives rise to the left recurrent laryngeal nerve (RLN) as it traverses the left side of the aortic arch. The left RLN hooks around the ligamentum arteriosum to ascend in the tracheoesophageal groove, then travels deep to the inferior cornu of the thyroid cartilage before penetrating the larynx.[2]

- **This paper discusses the case of a 73-year-old woman with a six-month history of hoarseness secondary to an aortic arch pseudoaneurysm**
- **Cardiovascular disorders involving the recurrent laryngeal nerve are rare and are known as Ortner's syndrome**

In 1897, Ortner originally described a recurrent laryngeal nerve (RLN) palsy in association with severe mitral stenosis.[3] Subsequently, cardiovocal syndrome was also identified with mitral regurgitation,[4] atrial myxoma,[5] left

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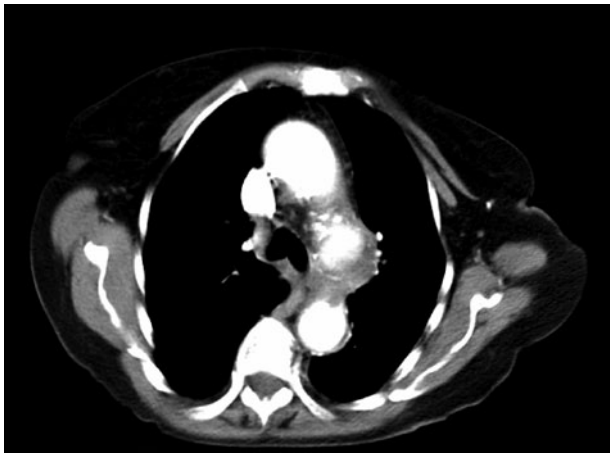

FIG. 1

Contrast-enhanced axial computed tomography scan, showing thrombus with some contrast in the aortic arch.

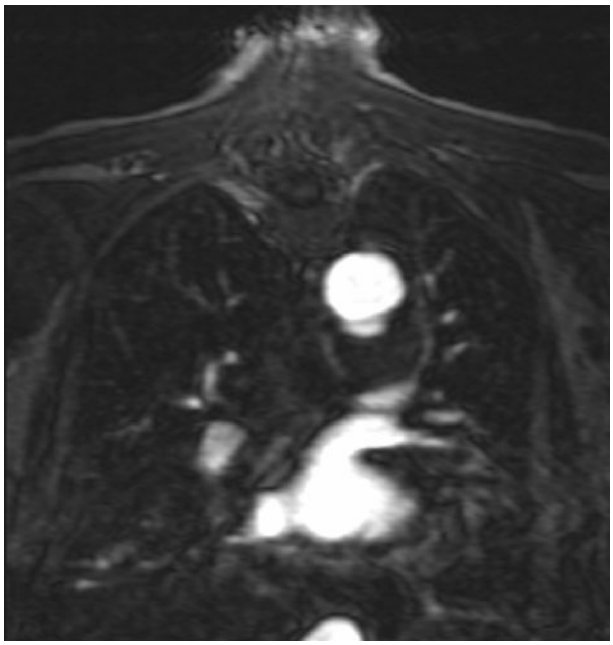

FIG. 2

Magnetic resonance angiogram showing a thrombus-filled aneurysm compressing the pulmonary vein.

ventricular aneurysm,[6] cor pulmonale[7] and various types of aortic aneurysms.[8–11]

The first documented case of Ortner's syndrome in Ireland was in 2002.[12] This involved an 81-year-old man presenting with hoarseness secondary to a 70 × 70 mm thoracic aortic aneurysm, who died a few days later. Ishii *et al.* published a series of five patients who presented with RLN palsy secondary to a thoracic aortic aneurysm.[13] In this series, one patient received no form of surgical intervention and his dysphonia continued to deteriorate. Of the four patients receiving vessel replacement, two had their symptoms of hoarseness and aspiration alleviated, while the remaining two developed exacerbated symptoms.[13]

Our 73-year old female patient had been hoarse for six months. Despite the size of the pseudoaneurysm of her thoracic aorta, she was managed conservatively. At the time of writing, three months post-diagnosis, she continued to do well. This report represents only the second documented case of Ortner's syndrome in Great Britain and Ireland, and the first demonstrating an aortic pseudoaneurysm.

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