Historical Lessons of Dysphonia in Aortic Aneurysm and Left Atrial Enlargement

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Bayones et al. reported an interesting case in the June 2020 edition of this journal in their paper titled "Aortic aneurysm as a cause of dysphonia in a patient who smokes" of a 77-year-old male with vocal cord paralysis (VCP) caused by compression of the left recurrent laryngeal nerve (LRN) by a thoracic aortic aneurysm (1). There are several points which we herein want to clarify including the possessive forms of medical eponyms, historical account of when the findings of VCP caused by aortic aneurysms was first reported in the literature, and description and classification of the medical eponym "Ortner syndrome" and cardio-vocal syndrome.

We discourage the routine use of the possessive form in the medical literature when describing an entity named for that person for the following two reasons: First, the use of the possessive form should only be used if the person had the same condition that has been ascribed to his/her name. A notable exception is Trousseau's sign, named after Armand Trousseau (1801–1867) who developed superficial and deep venous thrombosis, the disease which he described. To the best of our knowledge, Norbert Ortner (1865–1935) did not have the syndrome which has been named in honor of his discovery. Thus the non-possessive form should be used. Second, possessive eponyms hinder the ability to identify articles when performing a literature search. When searching for articles related to a disorder, the number of articles varies depending on whether the possessive or non-possessive form of name is used. Unaware of this limitations, the use of the non-possessive form may underestimate the number of manuscripts available on a topic (2). By abandoning the use of possessive eponyms, medical professionals can limit confusion and catalyze a more effective and efficient means of searching the medical literature.

Ortner reported in his 1897 paper entitled "Recurrenslähmung bei Mitralstenose" (Recurrent paralysis in mitral stenosis):

> The two cases I have observed make an additional contribution to the etiology of vocal cord paralysis caused by the disease of a mediastinal organ, namely the heart. There are stenoses of the mitral ostium where a powerful dilatation of the left atrium occurs and the left nerve recurrent is compressed by the aortic arch causing degeneration of its fibers and paralysis of the left vocal cord (p. 755) (3).

What was interesting about his report on these cases is that he humbly acknowledged in his first case, a 17-year-old male with mitral stenosis, of his erroneous diagnosis initially attributing the findings of VCP to a thoracic aortic aneurysm compressing the LRN rather than left atrial enlargement. With this knowledge, he did not recapitulate the same diagnostic error in the second cases of a 34-year-old female who presented with similar symptoms. He recognized that, *"In the future, such cases may be given special attention taking into account the differential diagnosis of an otherwise latent aortic aneurysm. My second observation teaches that the diagnosis can be made intra-vitam* (p. 755)*"* (3).

Thus, Ortner was well aware of the relationship between VCP caused by paralysis of the LRN by a thoracic aneurysm at the time of his publication. In fact, Marc Colombat de l'Isère's (1797–1851) chapter on aphonia and dysphonia in his book titled *Traité médico-chirurgical des maladies des organes de la voix* (Medico-surgical treatise of diseases of vocal organs), published in 1834, may be one of the earliest reported descriptions of the relationship between VCP and compression of the LRN by an aortic aneurysm:

> They can be caused by adynamic and ataxic fevers, by certain lethal diseases such as pulmonary phthisis, by *aneurysm of the aorta which then compresses the left recurrent nerve*, by lesions of the spinal cord, excessive swelling of the belly, apoplexy, hemiplegia, anemia, general asthenia, convulsions, epilepsy, hysteria, catalepsy, chorea, rabies, cholera, phrenesia, vivid moral affections, such as fear, anger, joy, etc., finally by the abuse of alcoholic liquors and the introduction into the body of certain poisonous or narcotic substances, etc. (p. 173, emphasis added) (4).

Within the literature the term Ortner and cardiovocal syndrome has been used synonymously to refer to VCP caused by compression of the LRN. The term cardio-vocal syndrome was coined by Stocker and Enterline in the *American Heart Journal* in 1958 during their description of a case of hoarseness due to LRN damage caused by compression of this nerve between the aorta and dilated pulmonary artery (5).

As described, Ortner syndrome is just one cause for cardio-vocal syndrome (Table 1) (1, 6–10). Thus, the term cardio-vocal syndrome can be best thought of as a group of diseases which all have in common compression of the LRNs albeit by different mechanisms.

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Table 1. Causes of cardio-vocal syndrome

Pulmonary artery
Primary and secondary pulmonary artery hypertension
Recurrent pulmonary artery embolism
Left atrium
Mitral stenosis or Ortner syndrome
Mitral insufficiency
Atrial myxoma
Congenital heart disease
Patent ductus arteriosus
Atrial septal defect
Eisenmenger complex
Ventricular septal defect
Left ventricle
Left ventricular failure
Left ventricular aneurysms
Right ventricle
Cor pulmonale
Thoracic aortic aneurysms

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