Cardiovocal (Ortner's) Syndrome: An Unusual Vascular Complication

Kardiyovokal (Ortner) Sendromu: Nadir Bir Vasküler Komplikasyon

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Geliş Tarihi/*Received:* 14.09.2009
Kabul Tarihi/*Accepted:* 11.01.2010

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ABSTRACT Cardiovocal syndrome is defined as the hoarseness due to the compression of the left recurrent nerve by the large vessel pathologies of thoracic cavity. A 75 year-old woman was admitted to our clinic with the complaints of shortness of breath, weight loss and hoarseness. Her past medical history was unremarkable except hypertension. In chest X-ray, there was a mass like lesion, neighbouring the arch of aorta in the upper zone of the left lung. The patient was evaluated by an ear, nose and throat surgeon. The left vocal cord paralysis was identified on laryngoscopic examination. The thorax computed tomographic examination showed a totally thrombosed saccular aneurysm in the lateral wall of the arch of aorta. The patient was informed about treatment options (endovascular repair vs medical therapy) and she refused any intervention. In the follow up, she was anticoagulated and antihypertensive drug therapy was prescribed. In cases presenting with hoarseness and dyspnea Cardiovocal syndrome should be kept in mind. Here we describe a case of Cardiovocal (Ortner's) syndrome with different and interesting clinical and radiological findings.

Key Words: Aortic aneurysm, thoracic; hoarseness

ÖZET Kardiyovokal sendrom, göğüs boşluğundaki büyük damar patolojileri sonucu sol rekürren laringeal sinir basısına bağlı gelişen ses kısıklığı olarak tanımlanmaktadır. 75 yaşında kadın hasta nefes darlığı, kilo kaybı ve ses kısıklığı şikayeti ile başvurdu. Özgeçmişinde hipertansiyon dışında özellik yoktu. Akciğer grafisinde sol üst zonda arkus aorta komşuluğunda, düzgün kenarlı, bir lezyon izlendi. Hasta ses kısıklığı nedeniyle kulak burun boğaz bölümü tarafından değerlendirildi ve laringoskopik muayenede sol vokal kord paralizisi gösterildi. Toraks bilgisayarlı tomografisinde, arkus aorta lateral duvarında tromboze sakküler anevrizma saptandı. Hasta tedavi seçenekleri hakkında bilgilendirildi (endovasküler tedavi ve medikal tedavi) ve herhangi bir müdahale istemedi. Antihipertansif ve antikoagülan tedavi başlandı. Ses kısıklığı ve nefes darlığı ile başvuran hastalarda Kardiyovokal sendrom ayırıcı tanılar arasında düşünülmelidir. İlginç klinik ve radyolojik bulguları olan Kardiyovokal (Ortner) sendromu tanısı konan hastamızı sunmayı amaçladık.

Anahtar Kelimeler: Aort anevrizması,torasik; ses kısıklığı

Turkiye Klinikleri Arch Lung 2010;11(1):39-41

In literature, Ortner's syndrome was firstly described by Ortner in 1897 by demonstrating the compression of the left recurrent laryngeal nerve (LRLN) by an enlarged left atrium due to the mitral valve disease.[1] Ortner's syndrome which is also known as cardiovocal syndrome is a clinical condition with hoarseness due to LRLN palsy in cardiovascular diseases including mitral stenosis, aortic aneurysm, atrial septal defect, patent ductus arteriosus, post-traumatic aortic aneurysm and endocardial pacemaker

implantation.[2,3] In the English literature Ortner's syndrome has been presented as case reports.[1,4]

We presented a case whose initial symptoms and the chest X-ray findings represented a lung pathology, however the final diagnosis was LRLN palsy due to the thrombosed aneurysm of the arch of aorta.

CASE REPORT

A 75 year-old woman was admitted to our hospital due to class II dyspnea (classifed according to New York Heart Association), weight loss (5 kg in the last 6 months), cough and hoarseness lasting for about 3 months. Her past medical history was unremarkable except hypertension. Physical examination findings, except for the decrease of breath sounds in both lung fields, and laboratory results were in normal limits. The posteroanterior chest X-ray showed increased cardiothoracic ratio, overinflation in the upper and intermediate zones of the both lungs, and calcified plaques in the arch of aorta. In addition there was a 3 cm-sized homogenous mass-like opacity in the upper zone of the left lung adjacent to the arch of aorta (Figure 1). Thorax computed tomogrpahic examination showed a large thrombotic (and including calcification) saccular aneurysm, 20x35 mm in size was present in the lateral wall of the arch of aorta just distal to the origin of the left subclavian artery (Figure 2). Transthoracic echocardiography revealed normal left ventricular systolic function, left ventricular concentric hypertrophy, diastolic dysfunction and mild aortic and tricuspid regurgitation.

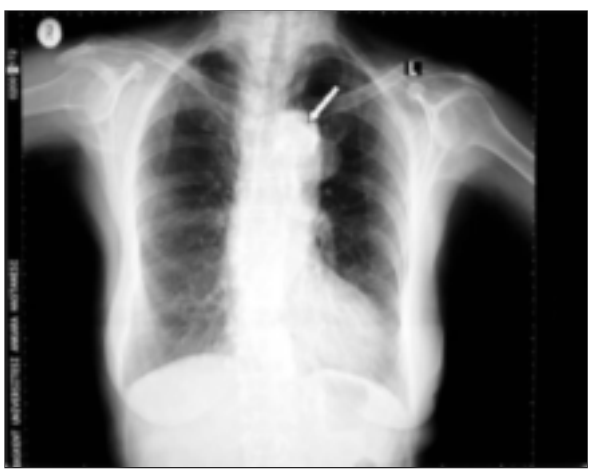

FIGURE 1: Posteroanterior chest X-ray showing sharply marginated saccular lesion of homogenous density, simulating a mass.

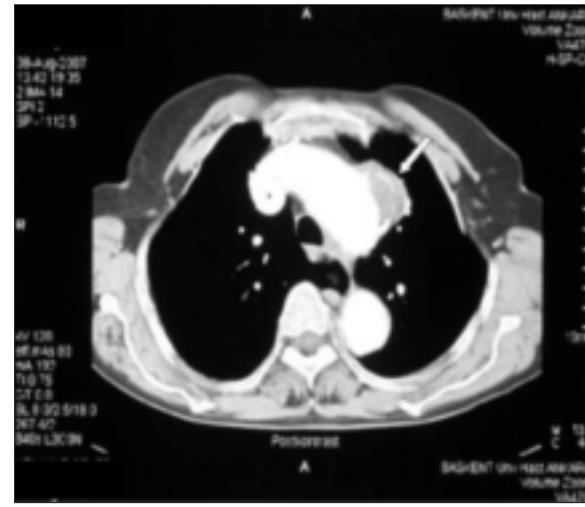

FIGURE 2: Thorax CT examination showed the thrombosed, calcified, saccular aneurysm originating from the lateral wall of the arch of aorta.

The vocal cords were examined by laryngoscopy to reveal the etiology of hoarseness and paralytic left vocal cord was demonstrated. In this patient, left vocal cord palsy was attributed to the thrombotic aneursym of the arch of aorta. There was no other pathology explaining the hoarseness of the patient.

The patient was informed about treatment options (medical therapy vs endovascular repair) and refused any intervention. In the follow up, she was anticoagulated and antihypertensive drug therapy was prescribed.

DISCUSSION

Left recurrent laryngeal nerve originated from the tenth cranial nerve, after passing aorta it follows the ductus arteriosus and reaches to the larynx. It has margins with the arch of the aorta, the apex of the left lung, the trachea, the esopagus, the Botallo ligament, the left pulmonary artery and the mediastinal lymph nodes. The pathologies of these neighbouring structures cause the LRLN palsy, resulting in hoarseness.[5] Malignant invasion of LRLN can occur with lung cancer (80%), thyroid cancer, esophageal cancer, skull base tumors, and metastases to the mediastinum and results with vocal cord

paralysis. Surgical iatrogenic injuries (23.9-34.5%) resulting in vocal cord paralysis include thyroid surgery (8%), anterior cervical disc surgery, carotid surgery, or chest surgery. Additionally, in rare occasions, thoracic aortic aneurysm or cardiomegaly may cause cord paralysis.[6,7]

The LRLN palsy due to cardivascular disease (Ortner's syndrome) is an uncommon clinical condition. In literature Cardiovocal syndrome has been presented as case reports. It is most commonly seen due to left atrial dilatation in mitral valve disease and rarely due to other cardiovascular pathologies including aortic anerysms. With technological improvements and the longer duration of lifetimes, the thoracic aortic aneurysms and other pathologies are more commonly diagnosed. Atherosclerotic thoracic aortic aneurysms are characterised by the slow increase of symptoms during the increase of diameter of vessel wall compressing the LRLN compared to the acute symptoms of traumatic thoracic aort aneurysm of which the aortic rupture can be the first sign. In our case hoarseness was slowly developed and became prominent in the last three months. The slowly developed symptoms shows that the aneurysm was slowly enlarged and the presence of thrombus and calcifications support chronic disease. Dyspnea and weight loss are not among the commonly encountered symptoms of Ortner's syndrome. Dyspnea can be seen in patients with mitral valve disease which leads to hoarseness due to the enlarged left atrium, and for this reason it may be a presenting feature of this syndrome in these cases. However, when Ortner's syndrome seen due to a vascular pathology, such as our case, who had thoracic aortic aneurysm, dypnea is not an expected symptom. The reasons of weight loss and dyspnea were unknown but it was thought that the old age and senile emphysema might be the contributing factors. Another possible cause of dyspnea in our case is diastolic dysfunction which identified on echocardiography. The prognosis of Ortner's syndrome depends on the underlying pathology. The vascular pathologies can be treated surgically by prosthetic graft implantation with thoracotomy or endovascular approach. Recently a case of cardiovocal syndrome was described in whom the hoarseness was resolved with treatment of the saccular thoracic aortic aneurysm with endovascular prosthesis implantation.[5] Although our case has somehow different clinical presentation she have similar features to the one described by Escribano et al[5], both of whom had Ortner's syndrome due to aortic aneurysm. In our case we recommended endovascular prosthesis implantation to the aorta but she did not accept this procedure. If it had been done so we could have the chance to observe the response to therapy and compare our results with that of Escribano et al's case.[5] We anticoagulated her and prescribed antihypertensive therapy.

CONCLUSION

In conclusion, when hoarseness is seen in conjunction with dyspnea Ortner's syndrome should be remembered in the differential diagnosis. In the evaluation of these patients, besides common causes of hoarseness, distant organ pathologies must also be taken into consideration. If there is suspicion of the lesion adjacent to the arch of aorta in chest X-ray, the cardiovocal syndrome must be remembered and the patient must be evaluated with thorax computed tomography and larygoscopic examinations.

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