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Case report

Left main bronchus compression by massive thoracic aorta aneurysm as a cause of dyspnea



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ARTICLE INFO

Article history:

Received 16 October 2014

Received in revised form

25 November 2014

Accepted 1 December 2014

Available online 26 December 2014

Keywords:

Thoracic aorta aneurysm

Main bronchus compression

Dyspnea

ABSTRACT

In the past, thoracic aorta aneurysms were common findings, especially in the older population. With the development of imaging methods and surgical treatment, the diagnosis can now be made earlier, revealing the condition at an earlier stage. However, even today we see patients, mainly the elderly, with huge thoracic aorta aneurysms. Because of ambiguous radiological findings, this condition can be initially misdiagnosed as mediastinal tumors. In this case report is presented a case of such thoracic aorta aneurysm, which caused dyspnea by left main bronchus compression. The purpose of this report is to highlight thoracic aortic aneurysms as a potential rare cause of dyspnea and cough.

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Introduction

Aneurysm is the second most frequent disease of the aorta after atherosclerosis [1]. Incidence of this disease is estimated to be about 3–4% in people over 65 years of age [2]. Recently, the Global Burden Disease 2010 project demonstrated that the overall global death rate from aortic aneurysms and aortic diseases increased from 2.49 per 100 000 to 2.78 per 100 000 inhabitants between 1990 and 2010, with higher rates for men [3,4]. On the other hand the prevalence and incidence of abdominal aortic aneurysms have declined over the last two decades. The burden increases with age, and men are more often affected than women [4]. The most important risk factors

are atherosclerosis, arterial hypertension [5] and some genetic disorders, where human genetic alterations causing aneurysm involve diverse gene products including constituents of the extracellular matrix, cell surface receptors, intracellular signaling molecules, and elements of the contractile cytoskeleton [6].

Thoracic aorta aneurysms are often incidental findings. TAA is less frequently revealed by clinical signs of compression, chest pain, an aortic valve murmur, or during complication, from which aortic dissection is the most devastating complication of thoracic aortic disease [7]. There is a rapid increase in the risk of dissection or rupture when the aortic diameter is >60 mm for ascending aorta and >70 mm for descending aorta [8].

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<http://dx.doi.org/10.1016/j.crvasa.2014.12.001>

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Treatment of aortic aneurysms can be surgical (aneurysm resection) or intravascular (stent graft implantation) [9]. While classical surgical strategies still dominate the care for acute and chronic pathology of the ascending aorta and the proximal arch region, new endovascular concepts are emerging [10]. A recently published study has shown that surgical approach can be used even in elderly patients [11].

Unfortunately, even today we see patients with a large TAA diameter; it sometimes even encroaches on the surrounding tissue which may cause the first symptoms leading a patient to see a medical specialist.

Here we present such a case of undiagnosed TAA leading to dyspnea as a result of left main bronchus compression.

Case report

This is a case of a 73-year-old woman with known diagnoses of chronic bronchitis, arterial hypertension, and atrial fibrillation. She had also undergone an abdominal aortic stent graft implantation because of an abdominal aorta aneurysm. Since July 2011, she was complaining of dyspnea, hoarseness and chest pain. She was initially evaluated by a general practitioner. Because of voice hoarseness she was referred to an Ears, Nose, and Throat specialist, who diagnosed her with paresis of the recurrent laryngeal nerve. As this did not fully explain the aforementioned dyspnea, she was then referred to the Respiratory Medicine department for further evaluation. A standard chest X-ray was performed as part of the initial examination. Initial chest X-ray is presented in Figs. 1 and 2.

A massive tumor-like lesion was found on the chest X-ray, probably arising from the mediastinum. The next step in diagnosis was a computed tomography (CT) scan, which showed massive thoracic aorta aneurysm compressing left main bronchus (Figs. 3 and 4).

She was referred to our university hospital for further treatment. Because of severe dyspnea and left main bronchus compression, bronchoscopy was indicated. We considered an endobronchial stent insertion as a potential treatment option.

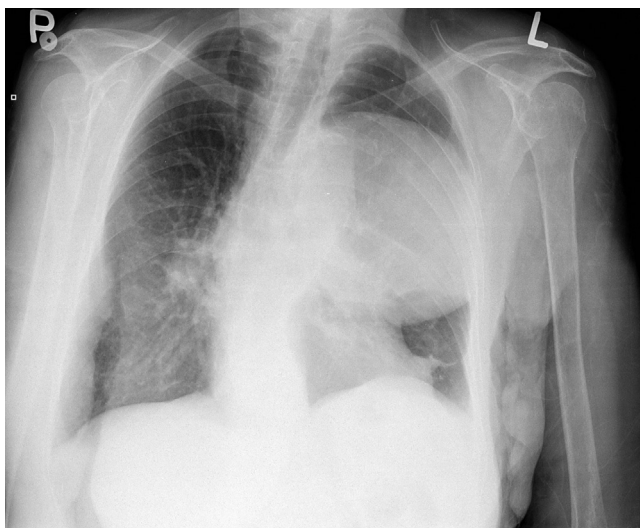


Fig. 1 – Initial posterior-anterior X-ray.



Fig. 2 – Initial lateral X-ray.

Endobronchial view of stenosis of inferior lobar bronchus is shown in Fig. 5.

Rigid bronchoscopy was performed under general anesthesia. Substantial stenosis of the inferior lobar bronchus was found near the segmental bronchi. The superior lobar bronchus was completely closed by external pressure. Due to anatomical constraints we were unable to insert a standard endobronchial stent. This condition may be treated by a small Y-shaped stent but because of the need for repetitive endoscopic cleaning, this procedure was not indicated. As this stenosis can also be solved by surgical treatment of the aneurysm, a cardiothoracic surgeon was consulted. Unfortunately, because of the patient's general health, such an extensive operation on the thoracic aorta could not be performed. The patient was indicated for conservative treatment of TAA.

Later in the same day, the patient was found without signs of life. Cardiopulmonary resuscitation (CPR) was started



Fig. 3 – Chest CT- Massive thoracic aorta aneurysm.

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