

Persistent Cough due to Underestimated Ascending Aortic Aneurysm

Metin Akgün¹, Fatih Alper², Hasan Kaynar¹, Mehmet Meral¹, Ömer Araz¹, Arzu Mirici¹

¹Atatürk University, Chest Disease, Erzurum, Turkey

²Atatürk University, Radiology, Erzurum, Turkey

Abstract

Cough lasting more than three weeks has been defined as chronic cough. There is no consensus as to best diagnostic strategy for it. Empirical therapy, laboratory investigation or both are used to confirm the diagnosis. In addition, the cough may have different causes resulting from different regions. In some cases, it may be difficult to find out the cause. In this report, we present a rare case with persistent cough due to an underestimated ascending aortic aneurysm, which is also associated with sinusitis and gastroesophageal reflux.

Keywords: chronic cough, sinusitis, gastroesophageal reflux, ascending aortic aneurysm

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INTRODUCTION

Cough of less than three weeks' duration has been defined as acute and that of more than three weeks as chronic [1]. Chronic cough is a common diagnostic and therapeutic problem. It may have many causes, but only a few diseases account for most cases. In adults, postnasal drip syndrome, asthma, and gastroesophageal reflux (GER) are the most common causes and have been referred to as a "pathogenic triad" of chronic cough [2]. There are a number of other causes of chronic cough, and they may represent a diagnostic confusion or may be an underestimated rare cause [3].

Herein, we present a persistent cough case who had no response to treatment of the associated sinusitis and GER due to presence of ascending aortic aneurysm.

CASE PRESENTATION

A 43-year-old nonsmoking male without any pre-existing disease admitted to our outpatient clinic with a one-year history of a nonproductive cough. When questioned regarding any other complaint, he reported that he initially felt something dripping down his throat, needed to clear his throat often, and had a bitter taste in his mouth and heartburn, especially at night. With these findings, he had been diagnosed as sinusitis and GER, and had been given

a treatment covering sinusitis and GER, including antibiotic, decongestant and proton pump inhibitor.

On admission, he was still taking the proton pump inhibitor once daily. Although his other symptoms had improved, there was no substantial improvement in his discomforting cough. Physical examination was unremarkable. Routine laboratory tests and pulmonary function tests were normal. Chest X-ray revealed mild mediastinal widening and elongation of the aortic arch (Figure 1). Computerized tomography images of paranasal sinuses and thorax were taken because of sinusitis history and mediastinal widening on chest X-ray, respectively. The paranasal sinuses and thorax computerized tomographies showed a retention cyst on the base of the left maxillary sinus and minimal hypertrophy of right inferior concha (Figure 2) and aneurysmatic dilatation of the ascending aorta (Figure 3), respectively. The patient then underwent surgery due to the aneurysmatic dilatation. When we contacted the patient approximately three months after surgery, his cough was nearly resolved.

DISCUSSION

Although chronic cough is a common symptom in the population, its diagnosis may be difficult in some cases. There are some different approaches to its accurate diagnosis, such as anatomic diagnostic protocol [2] or empiric treatment approach based on the most prominent symptoms [5]. It seems that the empirical approach in our case had failed to diagnose the main cause of cough, the ascending aortic aneurysm.

Because cough may arise from anywhere in the distribution of vagus, the full assessment of the patient with chronic cough relies on a multidisciplinary approach and close cooperation between the relevant departments, including gastroenterology and ear, nose and throat (ENT) departments, as well as respiratory medicine [4]. Empiric treatment may be cost-effective in the cases having only one cause. However, chronic cough is found to have two or more causes in 18 to 62% of patients, and three causes in up to 42% of patients [1,6,7]. Thus, a systematic approach should be considered in the evaluation and differential diagnosis of chronic cough

Corresponding Author: Metin Akgün, Atatürk University, Chest Disease, Erzurum, Turkey, Phone: +90 442 3164851, E-mail: akgunm@gmail.com

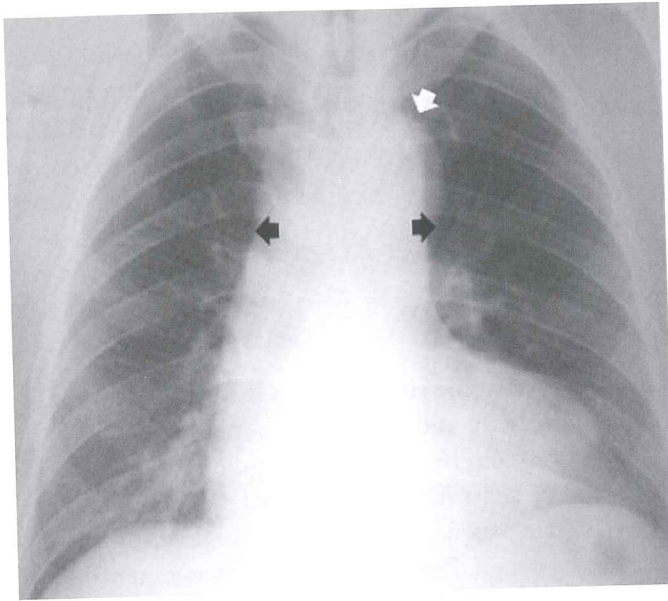


Figure 1. Chest X-ray shows mild mediastinal widening (black arrows) and elongation of aortic arch (white arrow).

[8-10]. In our case, three different causes were possible, but the main cause of the persistent cough had been underestimated due to empirical approach. Furthermore, to our knowledge, there is no case in the literature with three such different causes of chronic cough.

The patients with thoracic aortic aneurysm usually remain asymptomatic until the aneurysm expands. They are usually found incidentally after chest radiograph or another imaging study. The most common presenting symptom in the ascending aortic aneurysms is anterior chest pain; however, there may be other symptoms such as cough, wheeze or stridor when the trachea or main bronchi are compressed [11]. It is highly possible that the delay in diagnosis of our case may have resulted from the lack of chest pain and/or

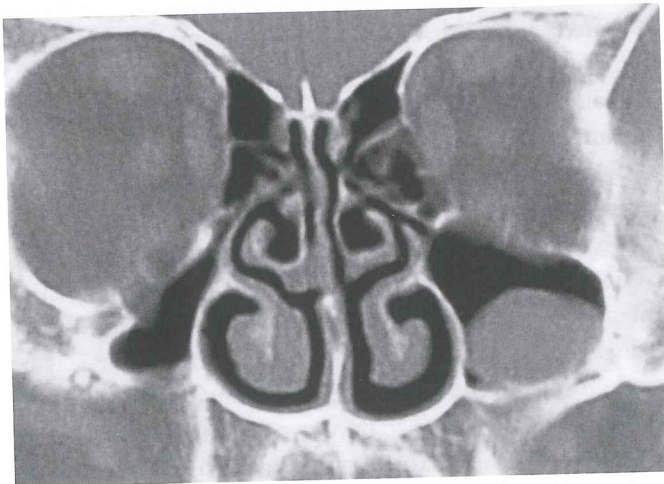


Figure 2. Paranasal sinuses computerized tomography revealed a retention cyst on the base of left maxillary sinus and minimal hypertrophy of right inferior concha.

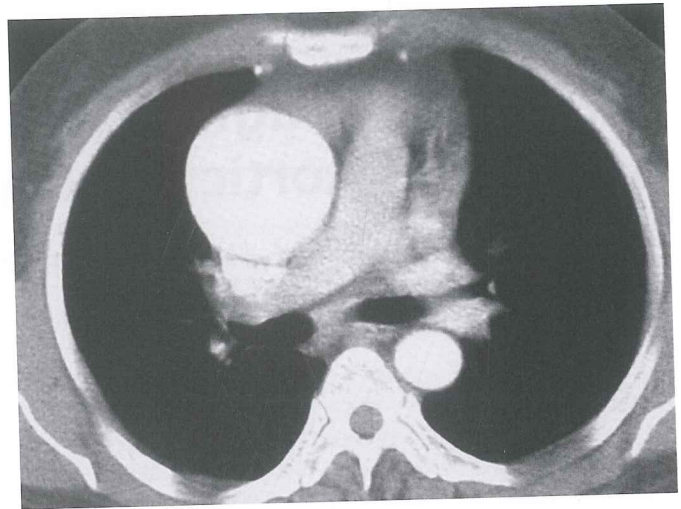


Figure 3. Computerized thorax tomography disclosed an aneurysmatic dilatation of the ascending aorta.

the presence of typical clinical findings of sinusitis and GER, which are the common causes of chronic cough.

In conclusion, the use of plain chest X-ray imaging in the evaluation of chronic cough as a first step tool may have some advantages even though typical symptoms of a common cause of chronic cough are present. In addition, chest X-ray should be evaluated carefully. In any suspicion on chest X-ray or in the case of failure of empirical symptomatic treatment, further diagnostic procedures such as computerized thorax tomography should be used.

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