Respiratory Medicine Case Reports 27 (2019) 100844

Contents lists available at ScienceDirect

Respiratory Medicine Case Reports

journal homepage: www.elsevier.com/locate/rmcr

Case report

Aberrant right subclavian artery and bibasilar bronchiectasis: is there any association?

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ARTICLE INFO

Keywords:
Aberrant right subclaviann artery
Arteria lusoria
Bronchiectasis
Chronic aspiration

ABSTRACT

Dysphagia is the most common symptom in symptomatic patients with aberrant right subclavian artery (ARSA) and also the risk factor of aspiration, especially in elderly patients. We presented an 84 year-old female patient with dysphagia induced by the compression of ARSA to the adjacent structures. Recurrent pneumonia and bibasilar bronchiectasis were recorded in the association with ARSA. We concluded that elderly patient with ARSA should be evaluated the pulmonary complications such as aspiration pneumonia and bronchiectasis.

1. Introduction

Aberrant right subclavian artery (ARSA) is an uncommon condition which was first described in 1735 by Hunauld [1]. Most of ARSA patients are usually clinical silence. Dysphagia is common symptom in symptomatic ARSA patients and mainly resulted from the esophageal compression [1]. ARSA can also present respiratory symptoms such as shortness of breath or chronic cough [2,3]. Herein we reported an ARSA patient with respiratory diseases (bronchiectasis and aspiration pneumonia) which could be considered as complication of the anomaly.

2. Case report

An 84 year-old female patient was hospitalized because of fever, cough with phlegm, and dyspnea. Her past medical history was unremarkable. During the recent 3 months, she had productive cough occasionally and felt difficult to swallow and retrosternal chest tightness. She had been admitted three weeks ago to treat her pneumonia during seven days. Before this hospitalization one day, she had fever and severe cough and her condition became worse on the hospitalized day. On physical examination, she was alert, pulse rate 100 beats/min, blood pressure 120/70 mmHg, temperature 38.5 °C, respiratory rate 24 breaths/min, and pulse oximetry (SpO2) 94–96% with room air. There were fine crackles on the bilateral lower lung zone. Three sputum smears for acid fast bacilli were negative. Her status was improved with the seven day course of intravenous antibiotic (piperacillin/tazobactam) but still dysphagia, chest tightness, and fine crackles on lung auscultation. The 64-slice chest computed tomography (CT) with contrast material showed bibasilar bronchiectasis (Fig. 1) and ARSA with Kommerell diverticulum. On the sagittal view of chest CT (Fig. 2), the calcification of trachea in front of and the presence of ARSA behind the esophagus created the pressure clip inducing esophageal obstruction which was proved by dilation of the esophagus above the clip. She and her family declined to the surgery. She was discharged after the diet consultation to help reducing dysphagia.

3. Discussion

ARSA is usually diagnosed accidently through the chest CT or autopsy and ARSA patients often develop the clinical symptom at the two limitations of age (children and elderly). A review of 141 ARSA cases by Polguj et al. revealed that the age of female ARSA patient appearing clinical symptom was more than 54 [1]. We reported a female ARSA patient presenting dysphagia and chest tightness at age 84. The reason of the late clinical manifestation could be explained as follow: the tracheal calcification and the aneurysm of the aberrant artery (atherosclerosis could exist simultaneously) would develop during aging process and this aging combination could put the pressure on esophagus resulting in dysphagia and chest tightness.

We suspected bronchiectasis in this case because of persistent fine crackles inconsistent with clinical improvement and recurrent respiratory infection. Chest CT confirmed bibasilar bronchiectasis which could be induced by chronic aspiration, pulmonary fibrosis, immunodeficiency, and immobile-cilia syndrome [4,5]. Elderly patient with dysphagia was important features suitable for the presence of chronic aspiration in bronchiectasis [6,7].

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https://doi.org/10.1016/j.rmcr.2019.100844
Received 2 March 2019; Received in revised form 13 April 2019; Accepted 13 April 2019

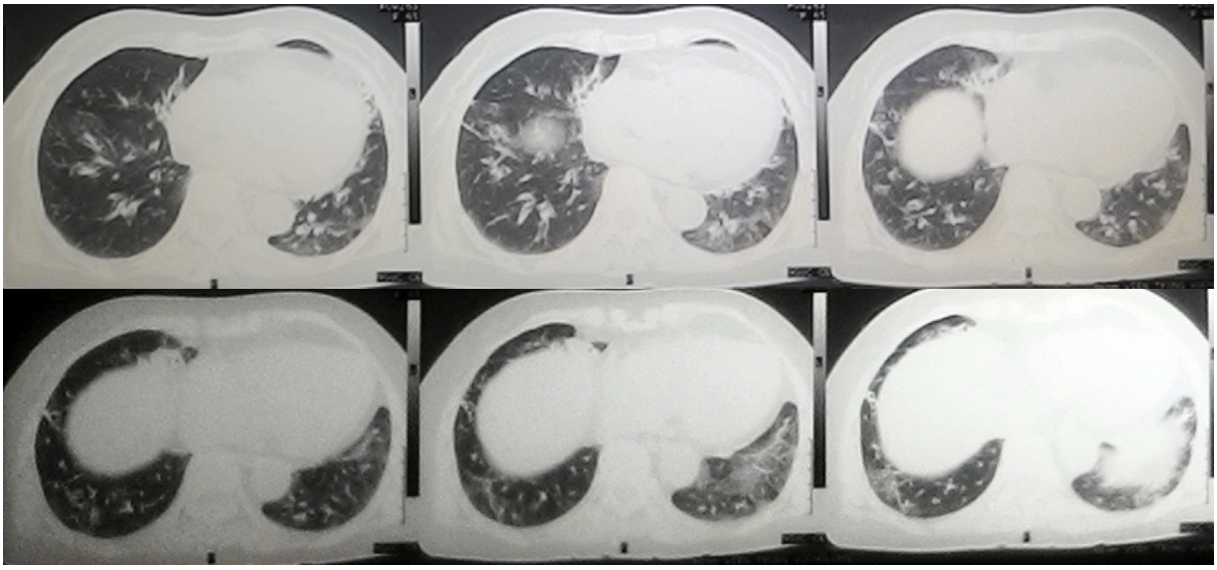

Fig. 1. Axial chest CT showed bibasilar bronchiectasis, bronchial wall thickening, and ground-glass opacity which were suitable features of bronchiectasis induced by aspiration.

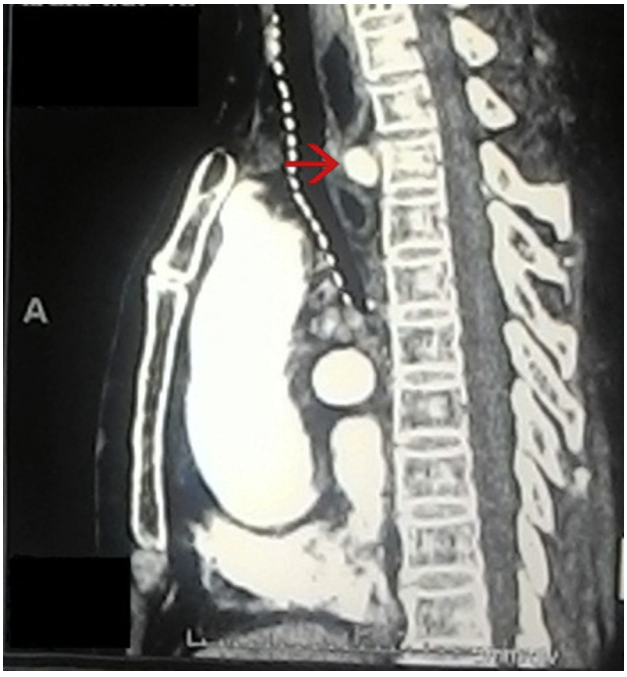

Fig. 2. The sagittal view of chest CT revealed ARSA behind the esophagus (red arrow) and the calcified trachea in front of it. Dilation of esophagus above and below the aberrant artery was sign of the esophageal obstruction.

ARSA can result in respiratory symptoms such as shortness of breath or chronic cough (relating to local compression to trachea) [1–3]. Moreover, pulmonary complications associated to ARSA such as aspiration pneumonia or bronchiectasis might appear similarity to our case. To our best knowledge, this is the first ARSA case revealed pulmonary complication. Although our case had no surgery for management of ARSA, we believed that pulmonary complication is an important issue need be evaluated in choosing the therapeutic method for ARSA patient (conservation or operation).

4. Conclusion

ARSA can cause not only local compression but also distal complication such as aspiration pneumonia or bronchiectasis, especially in elderly patient with dysphagia. Pulmonary condition should be considered in diagnosis and treatment for this anomaly.

Conflicts of interest

The authors declare no potential conflicts of interest.

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