

An unusual Cause of Late-Onset Dysphagia: Aberrant Right Subclavian Artery

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ABSTRACT

Dysphagia that develops in the late period due to vascular compression of the esophagus is a rare condition and is known as dysphagia lusoria. The arterial developmental anomalies that occur during embryological development of the branchial arch system are shown as the cause. Most of the cases are asymptomatic, but in 30–40% of the cases, tracheoesophageal symptoms occur. Dysphagia lusoria is diagnosed using barium fluoroscopic examinations and computed tomography. Manometric findings are variable, and age-related esophageal motility changes may contribute to the diagnosis of dysphagia lusoria. In this case report, we aimed to present a case of late-onset dysphagia due to the aberrant right subclavian artery. The patient had dysphagia against solid foods, and the symptoms were controlled with diet modification without the need for surgery.

INTRODUCTION

The most common causes of dysphagia in adulthood include motility disorders, malignancy, and esophageal strictures. Infective conditions, such as lingual tuberculosis, may rarely be the cause of dysphagia and odynophagia.^[1] Dysphagia lusoria, a rare cause of dysphagia, is seen as a result of compression of the esophagus by the aberrant vascular structure, which was first described by Bayford in a 62-year-old woman. On autopsy, the patient was found to have an aberrant right subclavian artery (ARSA) running anterior to and causing compression of her oesophagus.^[2] The most common congenital anomaly of the aortic arch is isolated ARSA, seen in 0.5–1.8% of the population, but this anomaly is frequently asymptomatic. In 30–40% of cases, this anomaly leads to tracheoesophageal symptoms, including dysphagia.^[3] It is rare in elderly age, and the decrease in vascular compliance is the most dominant factor in these cases. However, age-related esophageal dysmotility also contributes to symptoms. Radiological imaging methods, such as barium fluoroscopic examination and computed tomography angiography (CTA), have an important role in the diagnosis. In this case report, we aimed to present a case of late-onset dysphagia due to ARSA.

CASE REPORT

A 63-year-old female patient was admitted to our hospital with dysphagia of solid foods for about four months. She had no other symptoms other than dysphagia. Over the past few months, proton pump inhibitors have been used to alleviate symptoms. Esophagogastroduodenoscopy (EGD) examination that was conducted in external center did not show any pathology except minimal hiatal hernia. There was no abnormality on physical examination. Laboratory tests and biochemical parameters were normal. No pathology was found in the manometric examination. Barium fluoroscopy examination was performed to exclude thoracic lesion-induced dysphagia. Barium fluoroscopic examination demonstrated that compression of the proximal esophagus from the left at the level of the aortic arch, suggesting of a mass compressing the esophagus (Fig. 1). Chest CTA examination was performed to determine the etiology, ARSA was seen associated with aortic arch, causing compression of the esophagus from posterior (Fig. 2a, b). The patient was diagnosed as dysphagia lusoria with the present findings. Surgical treatment was not considered in the first stage, considering the ability of the symptoms to be intermittent and only against solid foods and the ability



Figure 1. Barium fluoroscopic examination shows, compression of the proximal esophagus from the left at the level of the aortic arch.

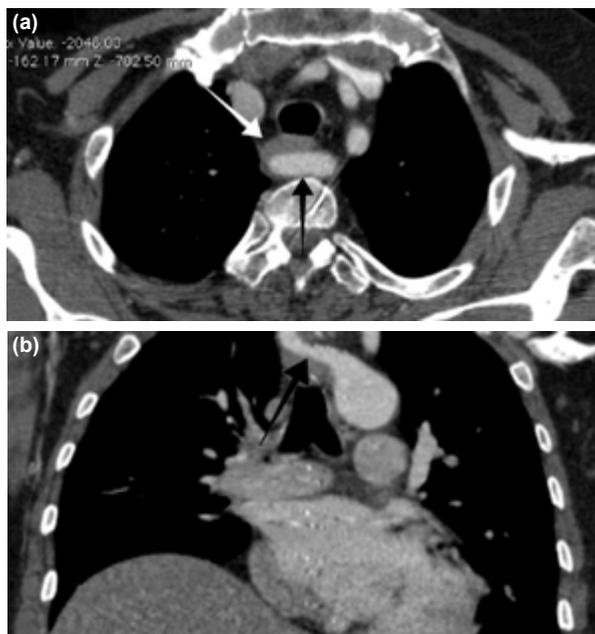


Figure 2. Axial (a) and coronal (b) CT angiography image shows, ARSA was seen associated with aortic arch, causing compression of the esophagus from posterior (white arrow; ARSA, black arrow; esophagus).

of the patient to provide nutrition. Symptoms were controlled with diet modification. Written informed consent was obtained from the patient for publishing this case.

DISCUSSION

During early embryological development, the aortic arches begin as a double system. The right aortic arch disappears from the proximal to create the right subclavian and common carotid artery. These latter vessels fuse to form the brachiocephalic trunk (or innominate artery), which is

usually the first branch of the aortic arch. Abnormal involution of the fourth vascular arch with the right dorsal aorta and persisting (seventh) intersegmental artery results in the evolution of an ARSA.^[4] The ARSA passes through the mediastinum between the esophagus and the vertebral column in most cases to reach the right axilla.^[5,6]

Most of the patients with ARSA remain asymptomatic throughout life.^[7] Symptomatic cases frequently present with respiratory problems in the neonatal period. This is most likely due to the absence of tracheal stiffness, and the resulting compression causes recurrent pulmonary infections.^[3,6] Apart from this, it can be seen in young adults and elderly as well as in our case. It is not clear why dysphagia lusoria develops in the elderly. With aging, increased esophageal stiffness decreased vascular compliance and atherosclerotic changes are among the theories proposed.^[3] In addition, the development of aneurysmal dilatation due to the presence of Kommerell diverticulum is also considered to be among the conditions causing dysphagia.^[8]

In elderly patients presenting with dysphagia, EGD is usually performed first. In patients with dysphagia lusoria, EGD is mostly normal, rarely in the esophagus 'pulsating impression' can be observed.^[9] In our case, EGD was normal, except for minimal hiatal hernia. Apart from this, vertebral column anomalies and retrosternal goiter may be the cause of dysphagia. In our case, we did not find any vertebral column anomaly or retrosternal goiter on physical examination and CT. In patients with dysphagia lusoria, as in our case, barium fluoroscopic examination can be used to demonstrate the compression of the ARSA in the esophagus. Barium swallow fluoroscopic examination may show a filling defect at the aortic arch level. Although barium fluoroscopic examination is guiding in diagnosis, gold is standard CTA or magnetic resonance (MR) angiography. CTA demonstrates ARSA, which creates a compression effect from the aorta-associated esophagus posterior, without the need for invasive angiography.^[3] Similarly, in our case, barium fluoroscopic examination showed mass formation compressing from the left to the esophagus at the level of the aortic arch and confirmed that the formation of the CTA was ARSA.

Treatment planning of dysphagia lusoria cases depends on the degree of symptoms and the potential effects on patients' ability to maintain their nutrition. It is reported that most of the cases will regress the symptoms by diet modification, slower eating, and better chewing. Severe symptoms that do not comply with diet modification and swallowing strategies may require surgical treatment.

CONCLUSION

As a result, although it is rarely seen in elderly patients presenting with dysphagia, ARSA related dysphagia lusoria should be considered in the differential diagnosis. Although barium fluoroscopy examinations are a clue for diagnosis, CT or MR angiography are gold standard methods and confirm the diagnosis without any need for invasive procedures. The severity of the symptoms, duration,

compliance with the patient and accompanying comorbid diseases are very important in treatment planning.

Informed Consent

Written informed consent was obtained from the parents of the patient for the publication of the case report and the accompanying images.

Peer-review

Internally peer-reviewed.

Authorship Contributions

Concept: S.A., M.E.; Design: S.A., M.E.; Supervision: S.A., M.E.; Fundings: S.A., M.E.; Materials: S.A., M.E.; Data: S.A., M.E.; Analysis: S.A., M.E.; Literature search: S.A., M.E.; Writing: S.A., M.E.; Critical revision: S.A., M.E.

Conflict of Interest

None declared.

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Geç Başlangıçlı Disfajinin Nadir Bir Nedeni: Aberan Sağ Subklaviyan Arter

Özefagusun vasküler kompresyonuna bağlı geç dönemde gelişen disfaji nadir bir durumdur ve disfaji lusoria olarak bilinir. Brankiyal ark sisteminin embriyolojik gelişimi döneminde meydana gelen arteryel gelişim anomalileri neden olarak gösterilmektedir. Olguların çoğu semptomsuzdur, ancak %30–40'ında trakeoözefajial semptomlar görülür. Disfaji lusoria tanısı baryumlu floroskopik incelemeler ve bilgisayarlı tomografi ile konur. Manometrik bulgular değişkendir, yaşa bağlı gelişen özefajial motilite değişiklikleri disfaji lusoria tanısına katkıda bulunabilir. Biz bu olgu sunumuzda, aberran sağ subklaviyan artere bağlı gelişen geç başlangıçlı disfaji olgusunu sunmayı amaçladık. Olguda katı gıdalara karşı olan disfaji mevcuttu ve cerrahiye gerek kalmadan diyet modifikasyonu ile semptomlar kontrol altına alındı.

Anahtar Sözcükler: Aberran sağ subklaviyan arter; disfaji lusoria; geç başlangıçlı.