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CLINICAL CONUNDRUM

A Patient with Dysphagia

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Abstract
We report a case of an uncommon type of dysphagia, due to esophagus compression by an aberrant right subclavian artery. This condition, known as dysphagia lusoria, was first recorded in 1787 by London physician David Bayford.

Keywords Dysphagia · Aberrant right subclavian artery · Dysphagia Lusoria · Esophagus compression

Case Presentation

A 69-year-old Greek woman, non-smoker, with a medical history of treated arterial hypertension and dyslipidemia, visited our hospital because of a progressively worsening dysphagia. A diagnosis of possible psychogenic dysphagia had been put 5 years ago and since then our patient received occasionally anti-anxiety medications. However, her dysphagia had worsened the last month to the point of not being able to eat solid foods. There was no weight loss reported. Our patient refused the performance of esophagogastroduodenoscopy. An esophagogram with barium swallow (Fig. 1) revealed a notching of the middle part of the esophagus. Subsequently, a contrast computed tomography (CT) scan of the chest was performed depicting the esophagus and its relation to neighboring anatomy (Fig. 2).

What is the Diagnosis?

Image analysis revealed the existence of an aberrant right subclavian artery (ARSA) arising from the right side of the aortic arch distal to the usual left subclavian artery and running posteriorly to the esophagus (Fig. 3). Therefore, the cause of dysphagia in our patient was a vascular extrinsic compression of the esophagus because of an anatomical

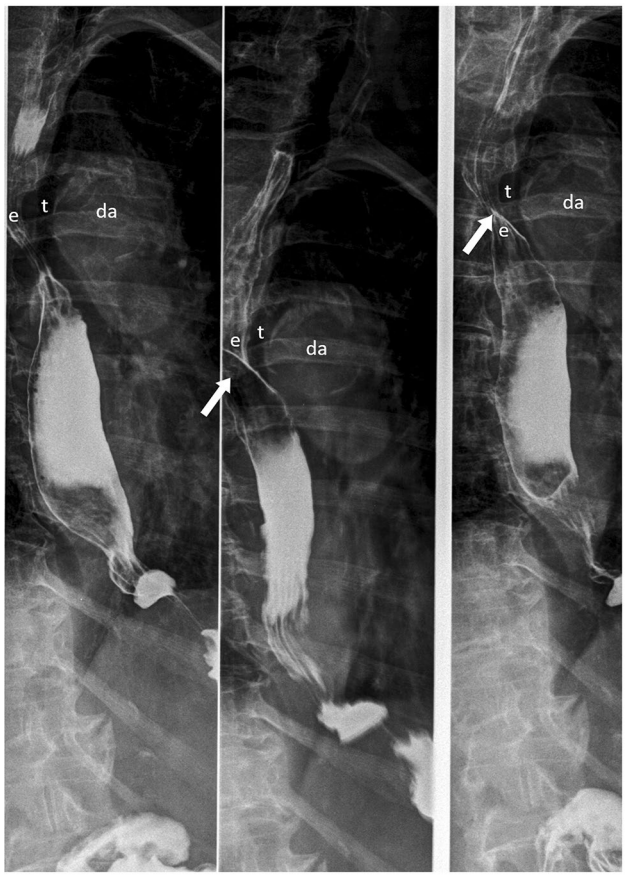

Fig. 1 Barium Esophagogram indicating a constriction (white arrow) of the esophagus (*e*) near the distal trachea (*t*) and next to the descending aorta (*da*)

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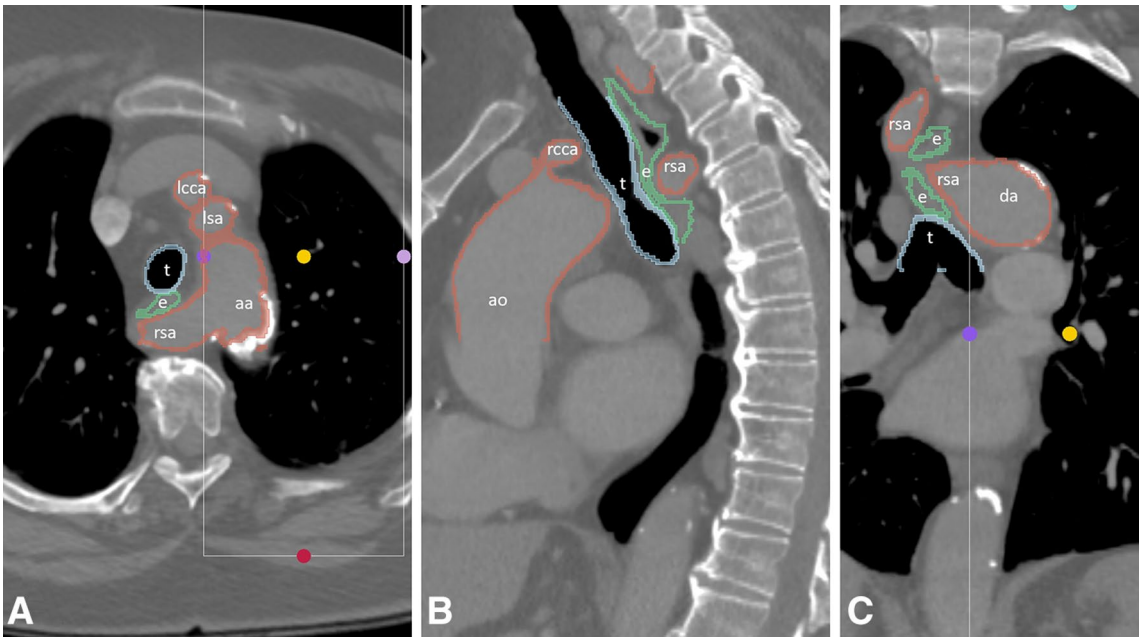

Fig. 2 Computed Tomography (CT) of the patient's thoracic cavity. **A** Axial CT slice. **B** Sagittal reconstruction. **C** Coronal reconstruction (3D Slicer, http://www.slicer.org). *t* trachea (blue color), *e* esophagus (green color), arteries (red color), *lsa* left subclavian artery, *ao* ascending aorta, *rsa* right subclavian artery, *rcca* right common carotid artery, *aa* aortic arch, *da* descending aorta, *lcca* left common carotid artery

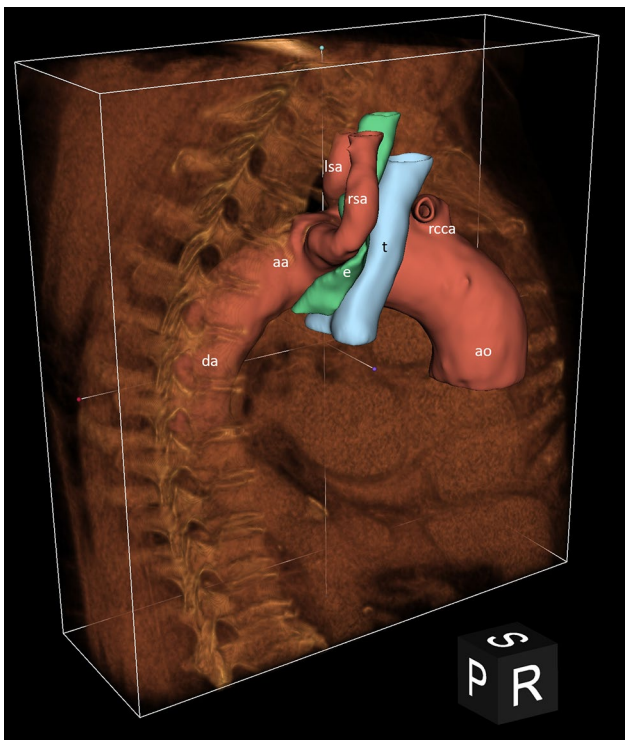

Fig. 3 Three-Dimensional (3D) Volume rendering of the thoracic cavity along with superimposition of manually segmented aorta (red color) and branches, depicting the constriction mechanism on the esophagus (green color) on the trachea (light blue color)—right superior posterolateral view (3D Slicer, http://www.slicer.org). *t* trachea, *e* esophagus, *lsa* left subclavian artery, *rsa* right subclavian artery, *ao* ascending aorta, *rcca* right common carotid artery, *aa* aortic arch, *da* descending aorta, *S* Superior, *P* Posterior, *R* Right

variation. This type of dysphagia is known as dysphagia lusoria.

Discussion

Dysphagia lusoria due to ARSA was first recorded in 1787 by London physician *David Bayford* (1739–1790) as the cause of death in a 62-year-old female patient with long-standing dysphagia [1]. The ARSA is an uncommon congenital anomaly of the aortic arch with incidence of 0.02–1.7% [2]. Although most cases of this anomaly are asymptomatic, symptoms may appear when trachea or esophagus is compressed (less than 10% of patients with ARSA) [3]. In our dyslipidemic patient, dysphagia was due to extrinsic compression of the esophagus by ARSA and its late onset was probably related to the normal elongation of the aorta taking place with age progression which moves the aortic arch apex superiorly while the arch branches are being pushed anteriorly and their take-off angle becomes more acute [4]. This age-induced anatomy alteration together with the decreased vascular compliance accompanying the middle or advanced age because of atherosclerotic changes [3] led to deterioration of symptoms by the compression of the esophagus between the ARSA and the trachea. The management of patients with dysphagia lusoria is dependent on the degree of symptoms and impact on the ability of the patients to maintain their weight and nutrition. If symptoms of patients are severe and do not improve with interventional dietary

and swallowing strategies, surgical treatment should be considered. Our patient was referred to a Tertiary Hospital for resection and reconstructive bypass surgery.

Compliance with Ethical Standards

Conflict of interest We declare no conflicts of interest.

Informed Consent Written informed consent was obtained from the patient for publication of this case report and any accompanying images.

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