

# Right Subclavian Artery Anomaly Which Causes Narrowing of the Esophagus and Eventually Causes -“Dysphagia Lusoria”, Shown on PET/CT

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\*Corresponding Author

<sup>1,2,3,4,5,6</sup>Mersin University, Faculty of Medicine, Department of Nuclear Medicine, Mersin, Turkey

## Abstract

Dysphagia lusoria (DL) is a rare clinical condition caused by the compression of the aberrant right subclavian artery on the esophagus. There are a limited number of cases found on PET/CT in the literature. Here we present a 63-year-old male case with aberrant right subclavian artery-related dysphagia that progressed to dysphagia lusoria.

**Keywords:** PET; PET/CT, dysphagia, lusoria, aberrant right subclavian artery.

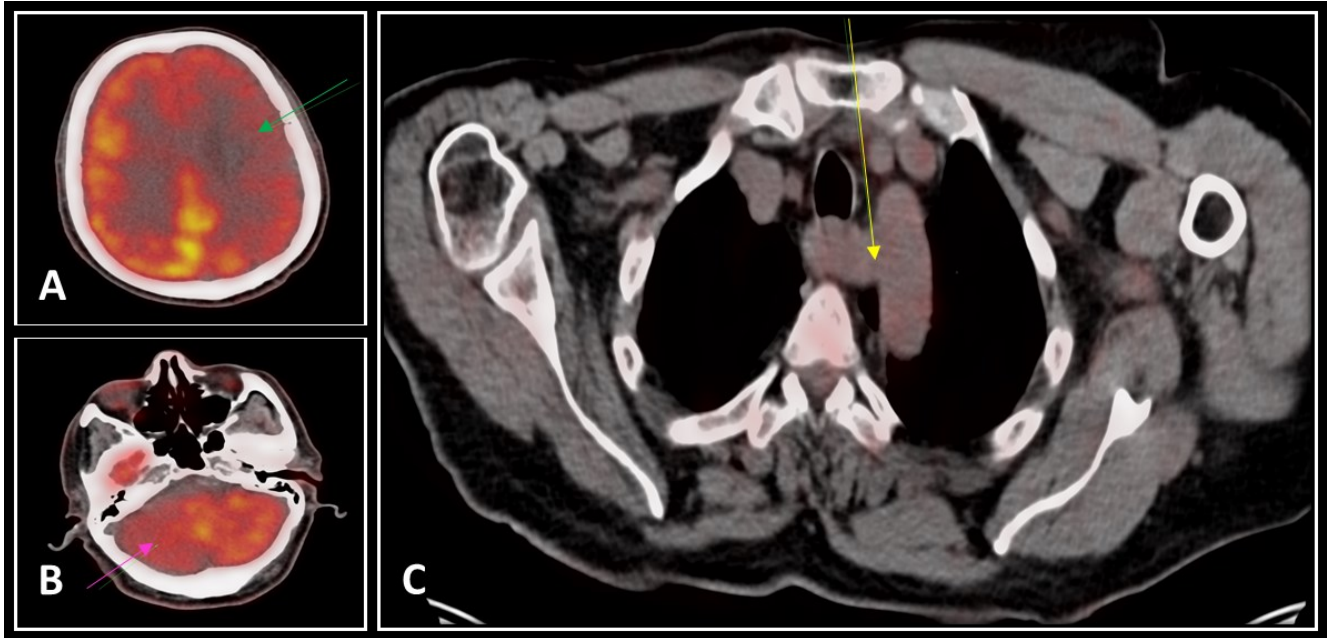
## Case Report

A 63-year-old man was seen in the gastroenterology outpatient clinic with a history of intermittent dysphagia when eating mostly solid foods for a long time. Since her complaints could not be controlled with diet control and proton pump inhibitors, esophageal passage radiography and endoscopy were performed. The endoscopy result is compatible with Barrett's esophagus; Upon visualizing focal stenosis in the distal 1/3 of the esophagus and wall irregularities in the distal part, a PET/CT scan was requested to rule out a possible malignancy. The patient was referred to the nuclear medicine clinic. PET/CT imaging: Following a 12-hour fast, when the blood glucose level was 146, oral contrast material was administered and 8.68 mCi 18F-FDG was administered i.v. It was performed 60 minutes after application. Images were taken in 3D mode from the calvarium to the proximal thigh for 1 minute per bed. The obtained images were evaluated after attenuation correction with low-dose nondiagnostic CT. PET/CT showed narrowing of the proximal esophagus at the T2-T3 vertebra level and an abnormal right subclavian artery location in the retroesophageal area. Increased mucosal hypermetabolism caused by inflammation, with the standard uptake value reaching 5.47 in the proximal part of the stenosis, and widening in the distal part of the stenosis were observed. The patient also showed the appearance of a hiatal hernia and a few millimetric lymph nodes in the paraesophageal area.

**Address for Correspondence:** Gökçe Yavan, Mersin University Training and Research Hospital, Clinic of Nuclear Medicine, Mersin, Turkey

**Phone:** + 90-324-2410000/22522 **E-mail:** gyavan95@gmail.com **ORCID ID:** orcid.org/ 0000-0002-7332-6293 **Received:** 07.12.2023

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**Fig.1:** The yellow arrow in C shows the right aberrant subclavian artery compressing the esophagus in sections passing through the T2-T3 vertebral level. In the same patient, widespread hypometabolism in the left temporoparieto-occipital region, compatible with previous cerebrovascular disease (Green arrow in A) and an appearance compatible with contralateral cerebellar diaschisis (pink arrow in B).

### Discussion

Dysphagia lusoria is a rare clinical condition caused by the compression of the aberrant right subclavian artery on the esophagus. It is derived from the Latin word meaning freak or joke of nature, with an estimated prevalence of about 0.5% (1). It occurs due to the persistence of the remnant of the fourth dorsal aortic arch. It has a higher prevalence in women and is often associated with other anatomical variations such as the non-recurrent laryngeal nerve, which is present in 86.7% of cases. In most cases, the abnormal right subclavian artery causes no symptoms (2). Dysphagia (ranging from mild intermittent dysphagia to more severe sustained dysphagia to solids and liquids), stridor, chest pain, and cough are the most common symptoms. Symptoms usually appear after the fifth decade of life and are rare in youth and childhood (3). In childhood, respiratory complaints, including wheezing, stridor, and recurrent lung infections, predominate due to the compressible nature of the trachea. In contrast, the trachea is cartilaginous and harder in adulthood (3). In addition, esophageal compliance decreases later in life. As a result, the most common symptom in old age is dysphagia caused by mechanical pressure on the esophagus, and this condition has been renamed dysphagia lusoria (3). Patients are usually diagnosed with a barium upper GI contrast study or contrast-enhanced CT scan. MRI, CT, and angiography are used to diagnose abnormal right subclavian artery and its complications. Here, the findings were also detected on PET/CT. Reporting this finding, although this variation rarely presents, is important to prevent future complications such as aneurysms and fistulas and to prevent serious complications that may arise from various oncological interventions (4).

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### Authorship Contributions

**Concept:** G.Y., **Design:** G.Y., **Supervision:** G.Y., A.G., M.S., M.A., P.P.O., Z.P.K., **Data Collection and/or Processing** G.Y., A.G., M.S., M.A., P.P.O., Z.P.K., **Analysis and/or Interpretation:** G.Y., A.G., M.S., M.A., P.P.O., Z.P.K., **Literature Review:** G.Y., **Writer:** G.Y.

**Conflict of Interest:** No conflict of interest was declared by the authors.

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