Cardiovasc Surg Int 2018;5(3):50-51
http://dx.doi.org/DOI: 10.5606/e-cvsi.2018.719
www.e-cvsi.org
©2018 Turkish Society of Cardiovascular Surgery. All rights reserved.

Cardiovascular Surgery and Interventions

Interesting Image Open Access

Aberrant right subclavian artery aneurysm: A rare entity

İhsan Alur[1], Ali Fedakar[1], Süleyman Hilmi Aksoy[2]

[1]Department of Cardiac and Vascular Surgery, Private Hisar Hospital Intercontinental, Istanbul, Turkey
[2]Department of Radiology, Private Hisar Hospital Intercontinental, Istanbul, Turkey

Received: August 06, 2018 ***Accepted:*** August 29, 2018 ***Published online:*** April 24, 2019

Aberrant right subclavian artery (ARSA) is the most frequent abnormality of the arch which accounts for 1% of the population.[1] In this abnormality, the right subclavian artery leaves the left part of the aortic arch as the final branch and progresses into the right axillary region through the posterior aspect of the esophagus (i.e., from left to the right). It often progresses between the esophagus and trachea or by the anterior aspect of the trachea.[2] This pathology is usually asymptomatic; however, it may lead to respiratory symptoms in children and difficulty in swallowing or a chronic cough in adults. In case of pressure on the esophagus, dysphagia lusoria may be observed. In case of an aneurysmatic widening of the aberrant subclavian artery in a segment close to the aorta, it is referred to as the Kommerell's diverticulum. This diverticulum may cause pressure on the tracheoesophageal region, leading to dissection/rupture due to excessive widening.[3,4] Herein, we present an 80-year-old male patient with an ARSA aneurysm.

An 80-year-old male patient was admitted to our clinic outpatient with dizziness and fatigue which increased gradually over the past year. He also suffered from hypertension. On contrasted computed tomography scan of the thorax, ARSA was observed with fusiform aneurysmatic dilatation. A mural thrombus measured as 18 mm in the thickest part of the aneurysm wall was detected. The diameter of the aneurysmatic segment was measured as 40 mm with the thrombus and 22 mm with the patent lumen. Diffuse enlargement (fusiform aneurysmatic dilatation) in the ascending aorta diameter (42 mm) was found. In addition, intense atherosclerotic calcification was observed in the descending aorta with the aortic arch with a significant tortuosity in the descending aorta. The fusiform aneurysm was measured as 4.8 cm in diameter at the largest site of the descending aorta. Plaque formations in the aneurysm wall were seen. The thickness of the thickest part of the plates was measured as 17 mm (Figure 1a-d). The patient was followed with medical treatment.

Antegrade cerebral protection via the subclavian or axillary cannulation is preferred during aortic arch surgeries. However, the placement of the aortic cross-clamp on the proximal aspect of the left subclavian artery may lead to serious cerebral complications in patients with an ARSA pathology. In such cases, cerebral protection can be achieved by antegrade cerebral perfusion through bilateral common carotid arteries. In patients with ARSA abnormalities and in the presence of a gastrointestinal bleeding due to delayed nasogastric or endotracheal intubation, tracheoarterial fistulas (between the trachea and ARSA) should be suspected.[3,5]

The failure rate of transradial coronary angiography is 40% in patients with ARSA. The direction of the catheter toward the ascending aorta or to the aortic root may be difficult via the right transradial approach. The ARSA abnormality can be also observed with the absence of the right recurrent laryngeal nerve in certain cases. This is important in patients undergoing thyroid surgery. The right recurrent laryngeal nerve is absent in its normal place in the inferior pole of the thyroid gland. It is placed in the lateral aspect of the gland or in an aberrant location, and nerve

Corresponding author: İhsan Alur, MD. Hisar Hastanesi Intercontinental Kalp ve Damar Cerrahisi Bölümü, 34768 Ümraniye, İstanbul, Turkey.
Tel: +90 216 - 524 13 00 e-mail: alur_i@hotmail.com

Citation:
Alur İ, Fedakar A, Aksoy SH. Aberrant right subclavian artery aneurysm: A rare entity. Cardiovasc Surg Int 2018;5(3):50-51.

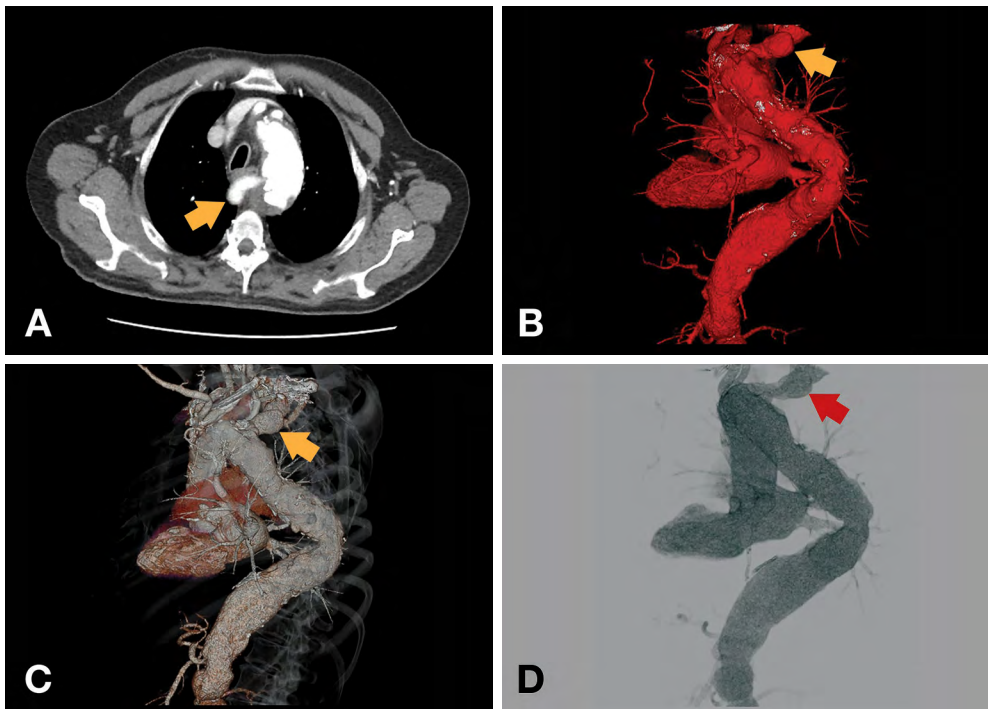

Figure 1. Thoracic contrasted computed tomography images of aberrant right subclavian artery aneurysm.

injury may occur during thyroidectomy.[5] Again, during interventions of anterior cervicothoracic region pathologies (i.e., tumor or disc hernia) and during right thoracic outlet syndrome surgery, identifying ARSA prior to surgery would avoid vascular injuries and related bleedings.

In conclusion, previous identification of aberrant right subclavian artery is important in avoiding vascular injuries and cerebral complications in patients undergoing endovascular intervention on the aorta, aortic arch surgery, thyroidectomy, or cervicothoracic surgery.

Declaration of conflicting interests

The authors declared no conflicts of interest with respect to the authorship and/or publication of this article.

Funding

The authors received no financial support for the research and/or authorship of this article.

REFERENCES

1. Karacan A, Türkvatan A, Karacan K. Anatomical variations of aortic arch branching: evaluation with computed tomographic angiography. Cardiol Young 2014;24:485-93.
2. Kau T, Sinzig M, Gasser J, Lesnik G, Rabitsch E, Celedin S, et al. Aortic development and anomalies. Semin Intervent Radiol 2007;24:141-52.
3. Alur İ, Alihanoğlu Yİ, Güneş T, Çıtışlı V. An assessment of the clinical significance of aortic arc variations. Turk Gogus Kalp Dama 2015;23:804-5.
4. Sierra-Galan LM, Shveid-Gerson D, Gomez-Garza G, Rey-Rodriguez A. Double incomplete aortic arch and Kommerell's Diverticulum as a cause of chronic cough. Arch Cardiol Mex 2015;85:158-60.
5. Polguj M, Chrzanowski Ł, Kasprzak JD, Stefańczyk L, Topol M, Majos A. The aberrant right subclavian artery (arteria lusoria): the morphological and clinical aspects of one of the most important variations--a systematic study of 141 reports. ScientificWorldJournal 2014;2014:292734.