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Case Report

Anatomical variation of the origin of the left vertebral artery-A case Report

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This article describes a case of unusual origin of left vertebral artery from the arch of aorta as a case report. This variation was found in one of the cadavers at the department of Anatomy, Rashid Latif Medical College, Lahore. Pakistan. During routine dissection of anadult male cadaver, in the region of superior mediastinum and neck, we observed an atypical origin of left vertebral artery from the arch of aorta.

Keywords: Arch of aorta, left vertebral artery, variation

INTRODUCTION

The vertebral artery arises from the superior aspect of the first part of the subclavian artery. The artery ascends back between the longuscolli and scalenus anterior muscle. It is anterior to the pleura and lung and behind to the common carotid artery. On the left side, thoracic duct courses anterior to it. The vessel takes a vertical posterior course, to enter into the transverse process of the sixth cervical vertebra. It continues through the transverse foramina of the cervical vertebrae and after passing through the transverse foramen of the atlas, turns posteromedially on its posterior arch, pierces the duramater, and enters the foramen magnum (Paturet, 1958; Moore et al., 1992). The segment of the artery from its origin at subclavian artery to its respective transverse foramen is called the prevertebral segment (Matula et al., 1997). Knowing the variation of the origin of vertebral artery and its prevertebral course is of great importance for head and neck surgery (Matula et al., 1997; Krmpotic et al., 1985).

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The aim of this study is to describe a case of anomalous origin of left vertebral artery in adult male cadaver.

CASE REPORT

During a routine dissection of male adult cadaver donated to the Department of Anatomy at the Rashid Latif Medical College, Lahore, an unusual origin of left vertebral artery was observed (Figure 1), (Figure 2). Particular care was taken in dissecting the regions of the neck and thorax to preserve vertebral artery and the branches of the aortic arch. The thoracic cavity was opened and structures in the superior mediastinum were dissected. We gently cut the right and left brachiocephalic veins during the dissection of superior mediastinum. During dissection, we observed the course of the vessels originating from arch of aorta. The first branch we observed from the right side was the brachiocephalic trunk, thenwe observed the left common carotid artery and then third branch was the left subclavian artery. These branches coursed to the left. Between left

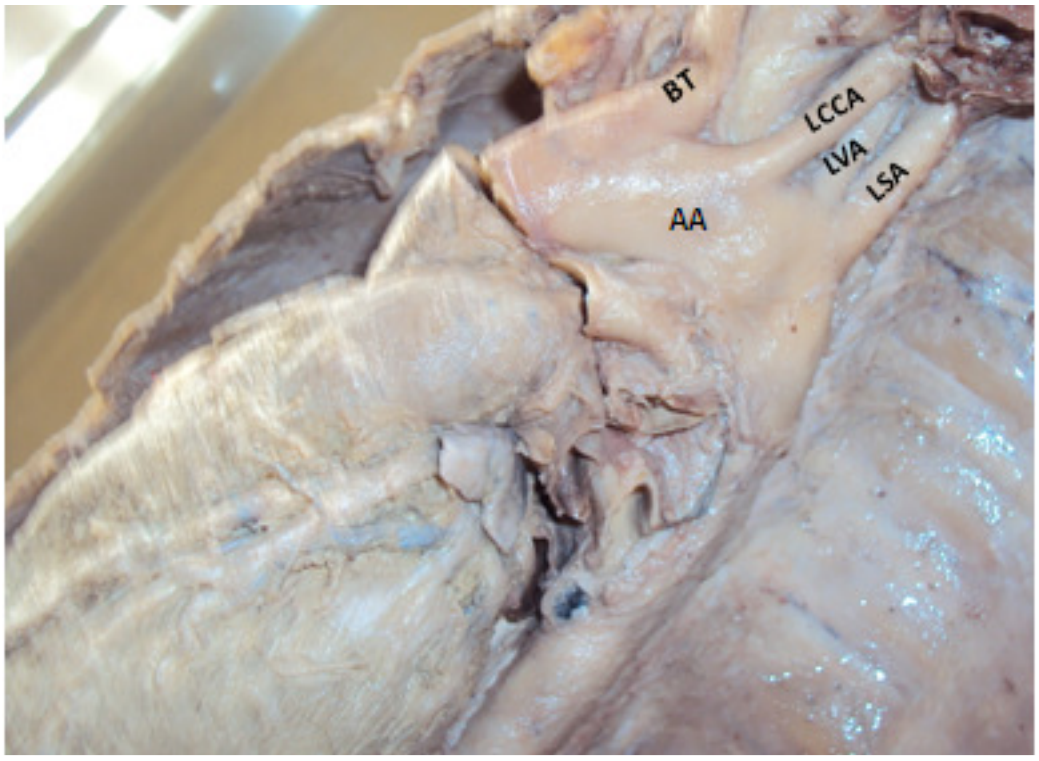

Figure 1. Origin of LVA (left vertebral artery) from AA(Aortic arch). Note the LSA(Left subclavian artery); LCCA (Left common carotid artery); and BT (Brachiocephalic trunk).

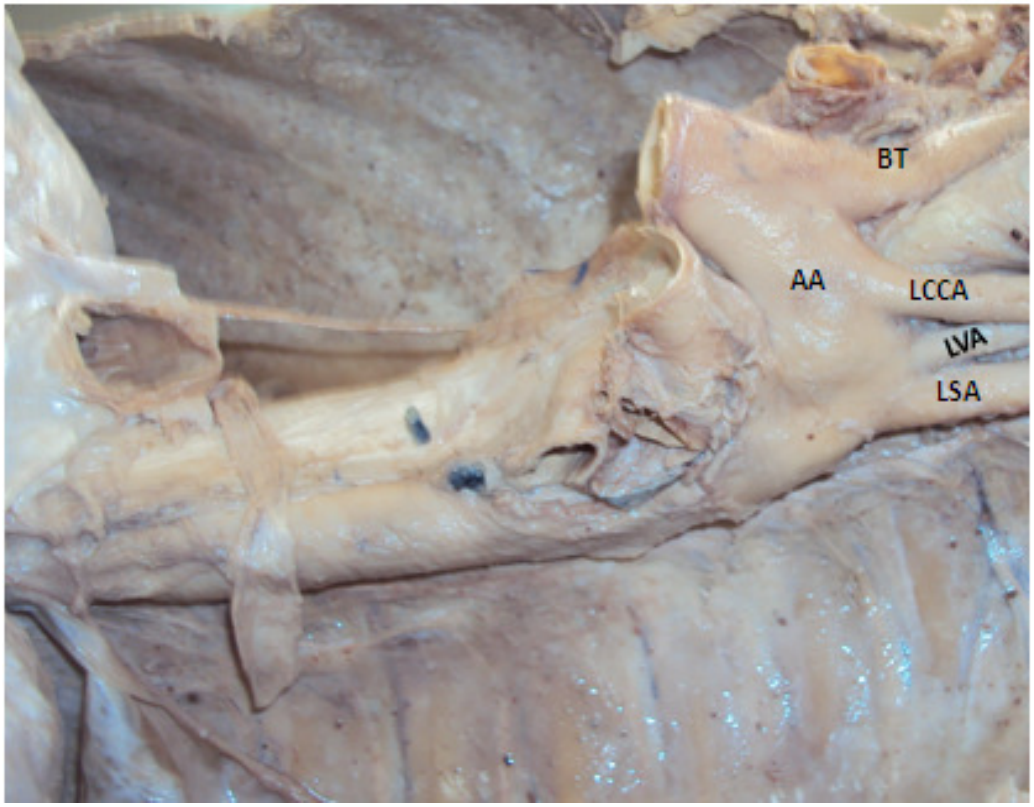

Figure 2.LVA (left vertebral artery) from AA (Aortic arch). Note the LSA(Left subclavian artery); LCCA (Left common carotid artery); and BT (Brachiocephalic trunk).

common carotid artery and the left subclavian artery, we observed another branch originating directly from the arch of aorta. After observation, consultations, and comparison with the case mentioned in the literature, we came to the conclusion, that we found an anatomical variation of the origin of the left vertebral artery.

DISCUSSION

It was obvious from the literature review thatanatomic and morphologic variations of thevertebral artery are of immense importance in diagnostic and surgical procedures in the head and neck region (Palmer, 1997; Krmpotic, 1978; Matula et al., 1997; George, 1997). Thefrequency of origin of the left vertebral artery from aortic arch in the range of about 1%-3% (Dasler and Anson, 1959). The abnormal origin of vertebral artery may favour cerebral disorders because of alterations in cerebralhemodynamics (Bernardi and Deton, 1975). According to previous studies, left vertebral artery of aortic origin was associated with a significantly higher incidence of vertebral artery dissection (Komiyana et al., 2001).

CONCLUSION

The knowledge of potential left vertebral artery origin variants is necessary and beneficial for planning aortic arch surgery or endovascular procedures.

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