



**VARIATIONS IN THE SIZE OF THE VERTEBRAL ARTERIES- CADAVERIC STUDY**

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Article Received on 17/11/2023

Article Revised on 07/12/2023

Article Accepted on 27/12/2023

**ABSTRACT**

Normally two vertebral arteries are present (right and left). These are the branches of subclavian arteries. In the skull at the ventral surface of the medulla oblongata both the vertebral arteries merge to form a basilar artery. They form the *vertebrobasilar vascular system*, the vertebral arteries supply blood to the upper spinal cord, brainstem, cerebellum, and posterior part of the brain.<sup>[1]</sup> Normally the size of the two vertebral arteries is equal but in some cases, One of the arteries might be smaller as compared to the other. Normally the patients are asymptomatic and the diagnosis of a small vertebral artery is usually made accidentally at the time of any diagnostic procedure or at the time of postmortem. In some cases, if the lumen of one of the vertebral arteries is very small as compared to others the blood flow to that side of the brain will be less as compared to the other side of the brain, Because, in the vertebral arteries, the flow of blood is streamlined flow like portal vein, these patients, may have some neurological defects at the time of birth because of less blood supply to the part of the brain. There are common variations in the course and size of the vertebral arteries. For example, differences in size between left and right vertebral arteries may range from a slight asymmetry to marked hypoplasia of one side, with studies estimating a prevalence of unilateral vertebral artery hypoplasia between 2% and 25%.<sup>[2]</sup>

**INTRODUCTION**

The first part of the subclavian arteries gives rise to the vertebral arteries in the neck. Both right and left vertebral arteries pass through the foramen transversarium of the cervical vertebrae C6 to C1. On the upper surface of the first vertebra that is Atlas, these take a steep turn and enter the skull by piercing the Atlanto-Occipital membrane. Both the vertebral arteries now appear on the ventral surface of the medulla oblongata and give different branches to the brain stem and the spinal cord. Both vertebral arteries join to form the Basilar artery in the Basilar groove on the Ventral surface of the pons. In this way, the vertebral arteries take part in arterial supply to the spinal cord brain stem cerebellum, and the other parts of the hindbrain. The branches of the Basilar artery take part in the formation of the circle of Willis and provide blood to the other parts of the brain including the hindbrain.

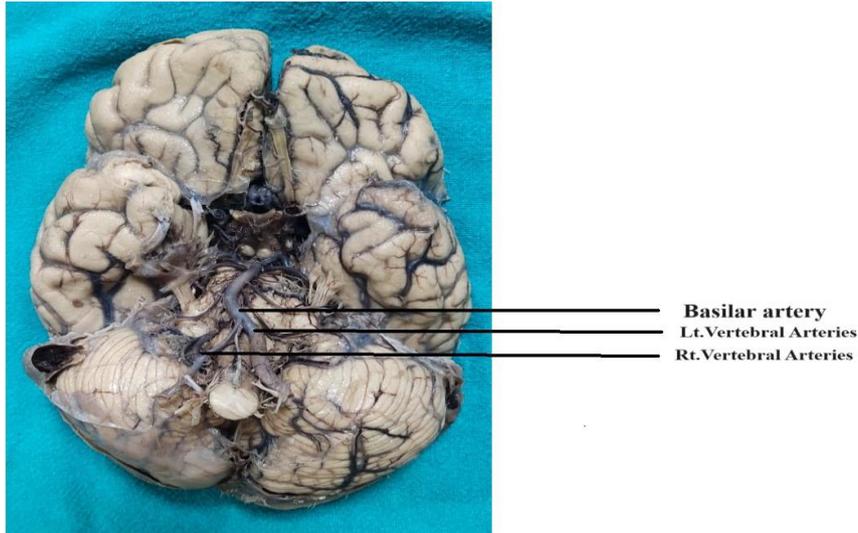
vertebral artery was smaller and thinner as compared to the left vertebral artery. The Basilar artery was normal in all the cases. We have no clinical history of this patient thus it is tough to comment on the effect of this anatomical variation on this patient.

**MATERIAL AND METHODS**

The study was conducted in the Department of Anatomy, Indira Gandhi Medical College, Shimla, Himachal Pradesh, India. We performed our study in twenty formalin-fixed adult cadaveric brains, irrespective of sex. Dissection was done according to Cunningham's manual.

**OBSERVATIONS AND RESULTS**

We dissected a total of 20 brains. We observed the Vascular arrangement around the brain. During our dissections, we found in one brain out of 20 that the right



### DISCUSSION

During dissection, we observed in one case out of 20 the right vertebral artery was smaller as compared to the left vertebral artery the branches from both the arteries were normal and the areas supplied by both the arteries were also normal. Both the arteries were joined to form the Basilar artery.

### REFERENCES

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