

## “VARIANT ANTERO LATERAL POSITON OF EXTERNAL CAROTID ARTERY AND ITS CLINICAL SIGNIFICANCE.”

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### ABSTRACT:

**Introduction:** The vascular variations in the human body are very common. In the region of the neck, variations of The Carotid Arteries Position, Branches may be seen.

**Study Design:** In Present study, we report a rare Positional Variation of External carotid [ECA] artery in relation with the internal carotid artery [ICA]. The External carotid artery was seen Antero lateral to the internal carotid artery at the bifurcation of the common carotid artery [CCA]. The clinical significance, embryological reasons of the variation is discussed. Such variations must be given utmost importance before planning for any neck surgeries to avoid post operative complications.

**Results:** This can explain embryologically since the external carotid arises mainly from the ventral aorta and internal carotid arises mainly from the dorsal aorta .

**Conclusion:** Variant Antero lateral position of External carotid artery may be of particular interest to surgeons and anatomists. Such variations must be given utmost importance before planning for any neck surgeries to avoid post operative complications.

**KEY WORDS:** External carotid artery, internal carotid artery.

### INTRODUCTION:

Common carotid artery [CCA], internal carotid artery [ICA] and external carotid artery [ECA] provide the major source of blood to the head and neck. Right common carotid artery is a branch of brachiocephalic artery as it passes behind the sternoclavicular joint. The artery courses vertically upwards in the carotid sheath to the level of the upper border of the thyroid cartilage of the larynx opposite the disc between C3 and C4, where it divides into external and internal carotid arteries. In the carotid triangle ECA lies in the antero medial to the ICA <sup>[1]</sup>. External carotid artery has eight named branches distributed blood to head and neck region.

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The development of ECA first appears as a sprout, which grows headward from the aortic sac close to the ventral end of third arch artery. The CCA arises from an elongation of the adjacent part of the aortic sac, and the third arch artery becomes the proximal part of the ICA. The dorsal aortae persist on the cranial side of the third aortic arches as continuations of the ICA [2].

### **CASE HISTORY:**

During routine dissection of the 1<sup>st</sup> MBBS students in the department of Anatomy at RIMS medical college, A 50 year old male cadaver we observed the rare Antero lateral position of the External carotid artery on the right side [Fig:1]. On the other side the position of artery found to be normal. The further course and branching pattern of the artery was normal.

### **DISCUSSION:**

Knowledge on the anatomical variations of the blood vessels is necessary for the correct interpretation of results obtained by means of different radio graphical techniques mainly because of the significant rates of the occurrence of variations and anomalies.

Handa et al [3] mentioned that the first description of the lateral position of the ECA was reported by an anatomist Hyrtl in 1841. He described that medial or lateral ECA migration during embryogenesis may be responsible for this anatomical variation. According to Bergman et al [4] that The ECA may be absent unilaterally or bilaterally, when unilaterally absent, the branches, usually derived from it, arose from the CCA or from the contra lateral vessel through anastomosis. The

artery may be located superficially and run lateral to the stylo hyoid muscle or between the posterior belly of digstric muscle and the stylohyoid.

According to Prendes et al [5] an anatomic variant for the position of the external carotid artery (ECA) at the carotid bifurcation was noted in 5.3 percent of patients studied by Doppler ultrasound and contrast angiography. The ECA was lateral to and posterior to the internal carotid artery (ICA). According Bussaka et al [6], lateral position of the external carotid artery was seen in 17 cases (4.3%), of which 13 cases were on the right side and 4 cases on the left side. According to Ueda S et al [7] lateral position of the external carotid artery and an abnormally high carotid bifurcation can cause peripheral hypoglossal nerve palsy reported previously

At the origin the internal carotid artery lies external as well as dorsal to external carotid. This can explain embryologically since the external carotid arises mainly from the ventral aorta and internal carotid arises mainly from the dorsal aorta [8]. Variant Antero lateral position of External carotid artery may be of particular interest to surgeons and anatomists. Such variations must be given utmost importance before planning for any neck surgeries to avoid post operative complications.

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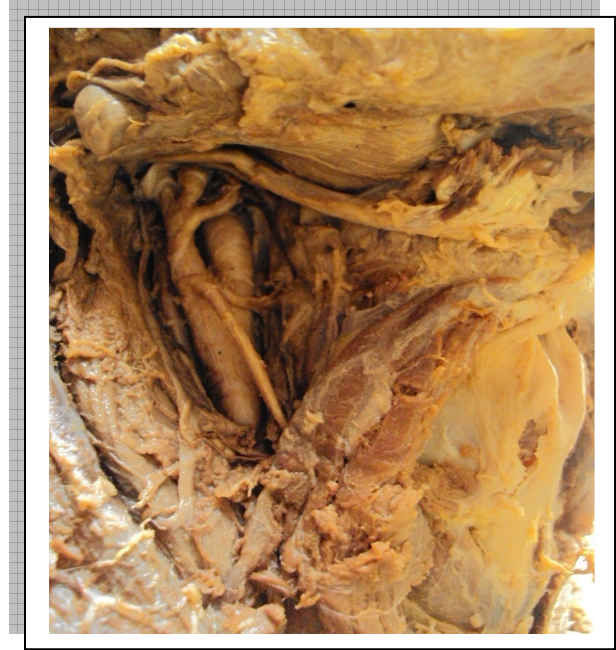


FIG.1: Antero Lateral position of ECA on Right side [ECA: External carotid artery, CCA: common carotid artery, ICA: Internal carotid artery, STA: Superior thyroid Artery, LA: Lingual artery, FA: Facial artery, PBD: Posterior Belly of digastrics, SBO: Superior belly of omohyoid, SCM: Sterno cleido mastoid, TC: Thyroid cartilage]

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