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Anatomy

TRIFURCATION OF LEFT COMMON CAROTID ARTERY AT TELANGANA REGION

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ABSTRACT To study the variations in the branching pattern of the left common carotid artery, being the principal artery nourishing almost the head and neck and brain.

In a routine cadaveric dissections for MBBS and BDS in MNR medical college, Fasalwadi,Sangareddy , we have found variation in the branching pattern of left common carotid artery.

KEYWORDS : External Carotid Artery (ECA), Common Carotid Artery (CCA), Superior Thyroid Artery(STA)

INTRODUCTION

The common carotid artery is the chief artery that supplies almost all the structures in the head and neck and Brain. A detailed study of its branching pattern is of considerable significance in planning head and neck surgery.

Common carotid artery gives two terminal branches, external and internal carotid arteries at the level of superior border of thyroid cartilage in carotid triangle . we got anathor branch at its bifurcation, it is in the carotid triangle and lies antero-medially to the common carotid artery .During its course it gives branches, of which the superior thyroid and lingual arteries . ECA provides vascular supply to the structures of head and neck. Development of common carotid and sprouts of external and internal carotid arteries are from the 3rd pharengeal arch area. The branches of ECA are the key landmarks for adequate exposure and appropriate placement of cross clamps on the carotid artery. So the knowledge of carotid system is useful to minimize the postoperative complications and in making bloodless surgical field. Knowledge of possible anatomical variations of t he CCA is especially important in facio-maxillary and neck surgeries.

Development

3rd Arch : forms **common carotid artery, first *(cervical)* part of internal carotid artery** *(rest of internal carotid arises from dorsal aorta)*, and **external carotid artery**

This also necessitates accurate interpretation of radiological images and radical dissection of the lymph nodes. The proper identification of the branches of the common carotid artery is significant .Branches of common carotid artery is key landmarks for adequate dissection for exposure and appropriate placement of cross clamps on the carotid arteries .The patterns of branching of CCA observed in the cadaver.

Materials and Methods

20 cadavers (14 males and 6 females) ages ranging from 50- 60 years were dissected at the Anatomy dissection hall, Department of Anatomy M.N.R. Medical college, K.N.R. University.

We are using dissection instruments scalpel, forceps for dissection.

We are following Cunninghams dissection method for cadaveric dissection and present study.

Fig 1. Common carotid a artery(1),external carotid artery (2),Internal carotid artery(3), variant branch (4), Sternocledomastoid artery (5), thyroid cartilage (6)

Result

In present study we observed Trifurcation of commoncarotid artery formed by internal carotid, external carotid and common trunk of superior thyroid – lingual arteries(Fig1). In our study Superior thyroid artery arising from the common carotid artery and redivided into two branches: one continued as the superior thyroid artery and the other lingual artery. The variation was observed on the left side. knowledge of carotid system is useful to minimize the postoperative complications and in making bloodless surgical field.

Discussion

The left CCA is one of the branches of Arch of aorta at superior mediastinum.superior thyroid artery is originated anteromedial to the common carotid artery before its bifurcation in the carotid triangle and bifurcated as external and internal caroid arteries at the level of the superior border of thyroid cartilage at C3 level. This third branch gives off superior thyroid, lingual arteries in the neck.

In a radiological study in different age groups, it is reported that the origin of ECA can be anywhere between C2-C6 vertebral levels[13]. In our

present study the CCA was given of at the usual level in all the specimens. The variations observed in the present study is trifurcation of a common carotid artery .CCA development is a complicated process of angiogenesis and remodelling which includes annexation and regression of vessels. The development of hyostapedial artery which links the neural crest arterial system to the ventral pharyngeal arterial system is an important event in the development of external carotid artery. Signals involved in annexation and regression are not always synchronized which results in various anatomical variations.

Conclusion

The left common carotid artery shows trifurcation branching of variations comprising early bifurcation, These variations may lead to inadvertent injury and cause confusion in interpretation of angiograms. Preoperative evaluation is recommended. In the present study we come across trifurcation was observed.

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