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Anatomical Variation of Left Superior Thyroid Artery: A Case Report

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Abstract: *Anatomical variation of superior thyroid artery is very important for neck surgeons during surgery. It is having relationship with external laryngeal nerve. In present case study, variation is in the left superior thyroid artery arising from left common carotid artery. Variation is found during the routine dissection. Superior thyroid artery on right side was found to be normal. There is a normal relation of external laryngeal nerve of both sides. The inferior thyroid artery of both sides did not show any variation. Knowledge of arterial variation of thyroid gland is helpful to surgeons during operative procedure.*

Keywords*: superior thyroid artery, thyroid gland, left common carotid artery, external laryngeal nerve*

I. Introduction

Thyroid is the largest endocrine gland and it plays important role in the maintenance of basal metabolic rate of the body. It is highly vascular endocrine gland. Superior thyroid artery normally originates from external carotid artery from anterior aspect. Variations in its origin have been reported earlier. Knowledge of this variation of superior thyroid artery is important in various surgical procedures. Identification of anatomical variation including arterial variation related to thyroid gland having great importance for planning surgical procedure. Knowledge of such variation of superior thyroid artery may be important for academic and clinical purposes.

II. Case Report

During the routine neck dissection of 60 yr old male cadaver in department of anatomy, Indira Gandhi Government Medical College, Nagpur, the left superior thyroid artery was found to be originating from left common carotid artery instead of left external carotid artery. Left superior thyroid artery originate about 1.3 cm below the bifurcation of left common carotid artery on anterior aspect. The left superior thyroid artery supplies superior pole of left lobe of thyroid gland. The left external laryngeal nerve shows its usual relationship with left superior thyroid artery. Right superior thyroid artery and both inferior thyroid artery having no variation.

III. Discussion

The thyroid gland is supplied by paired superior and inferior thyroid artery. superior thyroid artery arises from external carotid artery on anterior aspect just below the greater horn of the thyroid gland. It runs downward from its origin and gives small branches , the superior laryngeal artery pierces thyrohyoid membrane along the internal laryngeal nerve. It also gives a infrahyoid branch and cricothyroid branch.

A case of low origin of superior thyroid artery was reported earlier. Lucev et.al (1) reported that the superior thyroid artery arise more from common carotid artery in 47.5% cases, in 16% cases by Holinshed(2) and in 10% cases by Lasjaumias(3). There is a greater propensity of low origin of superior thyroid artery in females and more often in left side. Some studies reveal absence of left sided superior and inferior thyroid artery. In this case, low origin of left superior thyroid artery was observed in male cadaver. The right superior thyroid artery was present and having normal course. Previous studies also indicate that origin of superior thyroid artery is very rarely more than 1 cm proximal to the bifurcation[6]. The present case study reports proximal origin of superior thyroid artery about 1.3 cm from carotid bifurcation.In the present case, the left superior thyroid artery was arising from left common carotid artery that was terminating at the upper border of thyroid cartilage.

Variation of the thyroid arteries deserves a special attention in surgery. Knowledge of surgical anatomy of superior thyroid artery helps in the radical neck dissection surgeries, thyroidectomy, and catheterisation, reconstruction of aneurysm, carotid endarterectomy and interventional radiology.

IV. Conclusion

The branching pattern of superior thyroid artery is highly variable. The knowledge of origin and branching pattern of superior thyroid artery is essential in enhancing precision and decreasing morbidity related to surgical and interventional radiological procedures. Lack of experience with possible variation could lead to

fatal error if one blood vessel mistaken for another. So iatrogenic injury can be avoided with the knowledge of anatomical variations.

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